THE PUBLIC FINANCES

An Introductory Textbook

By JAMES M. BUCHANAN
University of Virginia

1960

RICHARD D. IRWIN, INC.

HOMEWOOD, ILLINOIS

First Printing, June, 1960

PRINTED IN THE UNITED STATES OF AMERICA

Library of Congress Catalogue Card No. 60 11308

PREFACE

A century ago men studied "Political Economy." Today they study "Economics" and "Politics." The additional specialization that this change has produced is, in certain respects, advantageous. But when we come to study the public finances of a nation, the change has been retrogressive in effect. For "Public Finance" as a field of study is, by definition, the study of the political economy. The student of economics can examine the working of a market system within a specified set of constraints; the student of politics can examine the organization and the processes through which social decisions are made. But the two must join in studying the effects of political or collective decisions on the economy. The study of public finance, both at its simplest and at its most complex levels, must involve two stages. Some attention must be given to the aims and the objectives that motivate individuals to behave as they do in the political process. In other words, what does "government" try to accomplish, and how efficient are its efforts in attaining its objectives? Secondly, how do the institutions organized to carry out collective objectives affect the behavior and the conditions of individuals in the private or market economy? These questions have always been important, but they assume added significance in this age of big government.

This book is designed to provide the student with an introduction to American fiscal institutions as these exist in the 1960's, and by way of this introduction, to provide him with some elementary steps in any answer to the basic questions just posed. No attempt is made to trace carefully the historical development of these institutions, and exhaustive factual detail is avoided whenever this is possible. The set of institutions that we call "the fiscal system" is not static. Changes take place continuously. On the other hand, reasonable stability does characterize the system taken as a whole.

A positive approach is taken in describing and analyzing the fiscal system. I have made no attempt to judge the "goodness" or the

"badness" of the separate aspects of the fiscal system from some presumed criterion of "general interest" or "general welfare." Where possible, I have indicated the alleged advantages and disadvantages of certain fiscal practices, and have arrayed these against each other. Traditional "principles" of public finance are discussed, but only along with other principles for fiscal organization based on the acceptance of wholly different objectives.

The organization of the material contained in the book is based on purely personal and subjective notions of order. The inclusion in Part I of some basic explanation of the economic functions of the state along with some historical material on the growth of the public sector seems appropriate. The subject material of Part II is more questionable. I have here included the theory of fiscal policy. Instructors who desire to shift this material to another point in the sequence may do so without damage to the over-all content since the material is independently contained. Part III, which can directly follow either Part I or Part II, is devoted exclusively to a consideration of the aims and objectives of a fiscal structure and to a consideration of the principles for fiscal organization that might be constructed from the acceptance of such objectives. The remaining parts of the book are somewhat more conventional and, in these, existing fiscal institutions are discussed in light of the analytical framework of the first three parts.

This introductory textbook does not contain sufficient historical, institutional, or analytical detail to provide the student with the full understanding of the fiscal system that is required for competent evaluation. Such is not its purpose. I hope that the book will serve to introduce the student to the wide range of issues that the fiscal system represents, to show him some of the complexities that are necessarily involved, and, most of all, to stimulate him to further study and effort in what must become an increasingly important field of social science, the Public Finances.

Supplementary reading material has been suggested at the conclusion of only some of the chapters in the book, because I have listed material only where I consider it to be of direct benefit to the student who wants to go somewhat beyond the textbook. I have made no attempt to provide bibliographical information as such, nor have I tried to recount the many sources that have influenced the formation of my own ideas.

I shall follow a similar procedure on acknowledgments, includ-

ing only those who have been directly helpful in bringing this book to fruition. Professors Lloyd Reynolds of Yale University (editor of the Irwin Series in Economics), Howard Schaller of Tulane University, and T. R. Snavely of the University of Virginia read the manuscript in its entirety, and each has offered helpful comments. Professor Francesco Forte of the University of Urbino, Italy, has provided interesting comments from a different cultural and scholarly environment.

Mrs. Gladys Batson, Mrs. Helen Pitman, and Mrs. Isobel Pelham deserve to be mentioned for their assistance in getting the manuscript out of hand. My wife has consistently defended orthodox English usage, and because of her efforts, many tortuous constructions have, I hope, been effectively circumvented.

JAMES M. BUCHANAN

Charlottesville, Virginia
January, 1960

TABLE OF CONTENTS

PART I. THE PUBLIC ECONOMY

CHAPTER PAGE

1 THE NO-GOVERNMENT ECONOMY 3

THE ORDERLY ANARCHY. THE ECONOMIC ORGANIZATION. PRINCIPLE OF CONSUMER SOVEREIGNTY. THE VOLUNTARY ECONOMY. SOCIAL JUSTICE, MONOPOLY, AND INSTABILITY. A BASIS FOR FURTHER DISCUSSION.

2 GOVERNMENTAL DECISION MAKING 9

THE SUBJECT OF PUBLIC FINANCE. WHAT IS GOVERNMENT? THE GOVERNMENT AS INDIVIDUALS.

3 GOVERNMENT AND THE MARKET ECONOMY 17

COLLECTIVE GOODS. THE RANGE OF COLLECTIVE GOODS: The Common Defense. Law and Order. Monetary Stability. Regulatory Measures. POLITICAL BOUNDARIES AND INDIVISIBILITY. PUBLIC FINANCING AND PUBLIC OPERATION. QUASI-COLLECTIVE GOODS AND SERVICES. PRIVATE SERVICES PUBLICLY PROVIDED. COLLECTIVE INTEREST AND MARKET ACTIVITY. THE SOCIAL SERVICES. MISCELLANEOUS GOVERNMENT SERVICES.

4 THE DEVELOPMENT OF THE PUBLIC SECTOR 28

THE IMPACT OF GOVERNMENT. WHAT DO WE WANT TO MEASURE? MEASURES OF GOVERNMENTAL ACTIVITY: Total Governmental Expenditure. Governmental Resource Absorption. Government Employment. Government Activity Relative to Gross National Product. TOTAL GOVERNMENT EXPENDITURES. RESOURCES ABSORBED BY GOVERNMENT. GOVERNMENT EMPLOYMENT. CONCLUSIONS.

5 REASONS FOR GROWTH OF THE GOVERNMENTAL SECTOR 44

WAR AND WAR-RELATED EXPENDITURE. FEDERAL "CIVIL" EXPENDITURES. STATE-LOCAL EXPENDITURES. WAGNER'S LAW OF INCREASING PUBLIC ACTIVITY. THE DISPLACEMENT AND SCALE EFFECTS. APPENDIX TO PART I: THE GOVERNMENT SECTOR IN THE NATIONAL INCOME ACCOUNTS.

PART II. THE BUDGET AND THE NATIONAL ECONOMY

6 NATIONAL INCOME DETERMINATION IN THE NO-GOVERNMENT ECONOMY 57

THE PRINCIPLES OF INCOME DETERMINATION—THE SIMPLE MODEL: National Income Defined. Two Measures for National Income. The Equality of Saving and Investment. Intended Saving and Intended Investment. Graphic Analysis. The Investment Multiplier. Conclusions Drawn from the Simple Model. NATIONAL MONEY INCOME, EMPLOYMENT, AND PRICES. CONCLUSIONS.

7 THE ECONOMIC EFFECTS OF BALANCED BUDGETS 70

THE NEUTRALITY HYPOTHESIS. THE UNIT MULTIPLIER HYPOTHESIS: Necessary Conditions for Unit Multiplier Analysis. Appraisal. THE CRITICAL LIMIT HYPOTHESIS. THE "INEFFICIENT PURCHASER" MODEL. THE IMPERIALISTIC HYPOTHESIS. CONCLUSIONS.

PAGE

CHAPTER

8 THE ECONOMICS OF UNBALANCED BUDGETS I: DEFICIT FINANCING 87

WAYS OF CREATING A DEFICIT: Expenditure Increase. Reduction in Taxes. PRACTICAL CONSIDERATIONS IN DEFICIT CREATION. FINANCING A BUDGET DEFICIT: Borrowing from the "Public." Borrowing from Commercial Banks. "Borrowing" from Federal Reserve Banks. FEDERAL DEFICITS AND STATE-LOCAL DEFICITS. CONCLUSIONS.

9 THE ECONOMICS OF UNBALANCED BUDGETS II: SURPLUS FINANCING 100

WAYS OF CREATING A SURPLUS: Expenditure Reduction. Tax Increase. PRACTICAL CONSIDERATIONS. DISPOSING OF SURPLUS FUNDS. CONCLUSION.

10 NORMS FOR FISCAL POLICY 106

CRITERIA FOR STABILIZATION POLICY. MONETARY POLICY AND FISCAL POLICY.

11 RULES FOR FISCAL POLICY 115

THE BALANCED BUDGET RULE. BUDGET BALANCE AT HIGH-LEVEL INCOME AND EMPLOYMENT. FUNCTIONAL FINANCE. CONCLUSIONS.

PART III. SOCIAL GOALS AND FISCAL INSTITUTIONS

12 FISCAL NEUTRALITY AND ECONOMIC EFFICIENCY 129

THE IDEALLY NEUTRAL FISCAL SYSTEM: The Wicksell Principle of Taxation. SECOND-ORDER EFFICIENCY: The Lump-Sum Tax. The General Proportionate Income Tax. The General Sales Tax. The Lump-Sum Subsidy. The Conception of General Expenditure. EQUITY AND EFFICIENCY: Equal Treatment for Equals. EFFICIENCY AS A FISCAL NORM. CONCLUSION.

13 ECONOMIC GROWTH AS A FISCAL OBJECTIVE 142

GROWTH IN THE NO-GOVERNMENT ECONOMY. GROWTH IN THE IDEALLY NEUTRAL POLITICAL ECONOMY. GROWTH IN THE REAL-WORLD ECONOMY. FISCAL INSTITUTIONS RETARDING ECONOMIC GROWTH: Real Income as a Tax Base. Income Tax Progression. Taxation of Transfers of Wealth. Double Taxation of Saving. Double Taxation of Corporate Income. Social Welfare Expenditures. FISCAL INSTITUTIONS ACCELERATING ECONOMIC GROWTH: Favorable Tax Treatment for Capital Gains. Accelerated Amortization. Expenditures for "Social Overhead" Capital. Expenditure for Education and Research. Injection of Money by Nonfiscal Means. ECONOMIC GROWTH AS A POLICY OBJECTIVE. CONCLUSIONS.

14 REDISTRIBUTION VIA THE FISCAL PROCESS 153

INCOME DISTRIBUTION IN THE NO-GOVERNMENT ECONOMY. THE ETHICS OF MARGINAL PRODUCTIVITY DISTRIBUTION. REDISTRIBUTION THROUGH THE FISCAL PROCESS: Education as a Means of Equalizing Economic Opportunity. Direct and General Redistribution through Taxes and Subsidies. Direct Redistribution among Specific Groups. Indirect Redistribution through Discriminatory "Pricing." REDISTRIBUTION BY NONFISCAL MEANS. CONCLUSIONS.

15 TRADITIONAL PRINCIPLES OF PUBLIC FINANCE 164

THE FUNDAMENTAL FISCAL ASYMMETRY. THE EQUITY PRINCIPLE. THE ABILITY-TO-PAY PRINCIPLE. THE BENEFIT PRINCIPLE. CONCLUSIONS.

16 FISCAL INSTITUTIONS AND COLLECTIVE "RATIONALITY" 176

THE CRITERION OF RATIONALITY. THE PROCESS OF FISCAL CHOICE. THE CRITERION OF CERTAINTY. TAXATION AND EXPENDITURE DECISIONS. CONCLUSION.

PART IV. FEDERAL EXPENDITURES

CHAPTER PAGE

17 THE FEDERAL GOVERNMENT BUDGET 187

THE MEANING OF THE "BUDGET." THE EXPENDITURE BUDGET AND THE EXECUTIVE. THE BUDGETARY PROCESS. BUDGETARY CLASSIFICATIONS OF FEDERAL EXPENDITURES: Functional Classification. Agency Classification. Object Classification. THE BUDGET AS A COMBINED ACCOUNT. TRUST FUND ACCOUNTS AND THE CASH BUDGET. RECOMMENDED BUDGETARY REFORMS: PERFORMANCE BUDGETING. RECOMMENDED BUDGETARY REFORMS: CAPITAL BUDGETING. CONCLUSIONS.

18 EFFICIENCY IN FEDERAL SPENDING 202

THE NOTION OF EFFICIENCY. THE CRITERION PROBLEM. PUBLIC EXPENDITURE: HIGH-LEVEL EFFICIENCY. RATIONALITY IN DECISION MAKING. LOW-LEVEL EFFICIENCY: Suboptimization. Operations Research. SYSTEMS ANALYSIS: FROM LOW TO HIGH LEVELS. COST-BENEFIT COMPARISONS: The Cost-Benefit Ratio. Present-Value Criteria. DIFFICULTIES IN COST-BENEFIT ESTIMATION. EFFICIENCY AND INTERDEPENDENCE. CONCLUSIONS.

19 FEDERAL EXPENDITURES FOR NATIONAL SECURITY 216

EXPENDITURE FOR MILITARY PERSONNEL. EXPENDITURE FOR OPERATION AND MAINTENANCE. EXPENDITURE FOR PROCUREMENT: Obligational Authority and Expenditures. RESEARCH AND DEVELOPMENT. SYSTEMS ANALYSIS APPLIED TO MILITARY SPENDING. CONCLUSIONS.

20 FEDERAL NONDEFENSE SPENDING 230

INTERNATIONAL AFFAIRS AND FINANCE. VETERANS' SERVICE AND BENEFITS. LABOR AND WELFARE. AGRICULTURAL EXPENDITURES. NATURAL RESOURCES. COMMERCE AND HOUSING. GENERAL GOVERNMENT. INTEREST. TRUST FUND EXPENDITURES: Social Security Expenditures. Highway Trust Fund Expenditures. CONCLUSIONS.

PART V. FEDERAL TAXATION

21 PERSONAL INCOME TAXATION: CONCEPTUAL PROBLEMS 251

THE DEFINITION OF INCOME. BASIC PROBLEMS OF MEASUREMENT. NONINCOME BASES FOR TAX DISCRIMINATION. DISCRIMINATION BY INCOME SIZE: PROGRESSIVE TAXATION. THE BASES FOR PROGRESSIVE TAXATION. CONCLUSION.

22 PERSONAL INCOME TAXATION IN THE UNITED STATES 261

DEFINITION OF THE TAX BASE. EXEMPTIONS AND DEDUCTIONS: Contributions. Interest. Taxes. Medical Expenses. Miscellaneous Deductions. Summary. RATE STRUCTURE. INCOME TAX RATES AND INFLATION. COLLECTION AND ENFORCEMENT. CONCLUSIONS.

23 PERSONAL INCOME TAXATION: ECONOMIC EFFECTS 280

THE NOTION OF A GENERAL TAX. ANNOUNCEMENT EFFECTS OF AN INCOME TAX: Work versus Leisure. Income in Kind. Incentives to Save. PROPORTIONAL AND PROGRESSIVE INCOME TAXATION: The Decreasing "Price" of Leisure. Rational Occupational Choice. Incentives to Save. EFFECTS OF EXISTING DEFICIENCIES IN INCOME TAXATION: Absence of Averaging. Favorable Treatment of Capital Gains. CONCLUSION.

CHAPTER PAGE

24 THE CORPORATION INCOME TAX 295

THE TAX BASE. RATE STRUCTURE. RATIONALE OF THE TAX. CYCLICAL INSTABILITY OF REVENUES. THE DOUBLE TAXATION OF CORPORATE INCOME. DIRECT ECONOMIC EFFECTS: Debt versus Equity Financing. Expenditure to Secure Nontaxable Income. INCIDENCE OF THE CORPORATION INCOME TAX. EFFECTS ON ECONOMIC GROWTH. EFFECT ON COLLECTIVE CHOICE. SPECIAL FEATURES OF CORPORATE INCOME TAXATION: Loss Carry-over and Carry-back and Corporate Mergers. Accelerated Amortization. Depletion Allowance. CONCLUSION.

25 OTHER FEDERAL REVENUE SOURCES 313

FEDERAL EXCISE TAXATION. ESTATE AND GIFT TAXES: Federal Estate Tax. The Federal Gift Tax. EMPLOYMENT TAXES: The Social Security Systems. Base and Rate Structure. Incidence and Economic Effects. CONCLUSIONS.

26 INFLATION AS A TAX 327

A BIT OF CONJECTURAL HISTORY. THE MODERN VERSION. INFLATION AND POLITICAL STABILITY. CURRENCY INFLATION WITHOUT TAXATION. INFLATION AND ECONOMIC GROWTH. ECONOMIC EFFECTS OF INFLATION. CONCLUSION.

PART VI. THE NATIONAL DEBT

27 THE PRINCIPLES OF PUBLIC DEBT 341

TAXATION VERSUS BORROWING. THE BURDEN OF PUBLIC DEBT. THE TRANSFER ARGUMENT. THE ANALOGY WITH PRIVATE DEBT. EXTERNAL AND INTERNAL PUBLIC DEBT. REAL PUBLIC DEBT AND DISGUISED MONEY CREATION. WHEN SHOULD GOVERNMENTS BORROW? SHOULD PUBLIC DEBT BE RETIRED? STABILIZATION ASPECTS OF PUBLIC DEBT. NATIONAL VERSUS LOCAL DEBT. CONCLUSIONS.

28 THE EXISTING NATIONAL DEBT 359

THE ORIGIN OF THE NATIONAL DEBT. THE COMPOSITION OF THE NATIONAL DEBT: Government Bonds. Treasury Notes. Certificates of Indebtedness. Treasury Bills. THE OWNERSHIP OF THE NATIONAL DEBT. DEBT LIMITATION. CONCLUSIONS.

29 MANAGEMENT OF THE NATIONAL DEBT 370

WHY IS THERE A DEBT MANAGEMENT PROBLEM? DEBT MANAGEMENT OBJECTIVES. ALTERNATIVE DEBT MANAGEMENT POLICIES. DEBT MANAGEMENT EXPERIENCE. POSSIBLE INNOVATIONS IN DEBT MANAGEMENT. CONCLUSIONS.

PART VII. STATE AND LOCAL FISCAL SYSTEMS

30 STATE-LOCAL EXPENDITURE PATTERNS 385

DIVISION OF FISCAL RESPONSIBILITY BETWEEN FEDERAL AND STATE-LOCAL GOVERNMENTS. DIVISION OF RESPONSIBILITY BETWEEN STATES AND LOCAL UNITS OF GOVERNMENT. STATE-LOCAL EXPENDITURES FOR EDUCATION: Economic Rationale of Educational Expenditure. Public Financing and Public Operation. Economic Effects of Public Financing of Educational Services. Federal Government Support of Educational Expenditures. STATE-LOCAL EXPENDITURES FOR HIGHWAYS. STATE-LOCAL EXPENDITURES FOR HEALTH AND WELFARE: Public Assistance. Public Hospitals. COMMUNITY FACILITIES AND SERVICES. MISCELLANEOUS EXPENDITURES. DEBT SERVICE: Tax Exemption of Interest on State-Local Securities. CONCLUSIONS.

CHAPTER PAGE

31 STATE-LOCAL GENERAL REVENUE SOURCES: SPECIFIC EXCISE TAXATION 405

GENERAL REVENUE. STATE AND LOCAL INCOME TAXATION. SPECIFIC EXCISE TAXES: SUMPTUARY AND REGULATORY. SPECIFIC EXCISE TAXATION: ECONOMIC EFFECTS: Competitive Conditions—Constant Cost Industry. Competitive Conditions—Constant Demand Price. Competitive Conditions—Increasing Cost Industry, Decreasing Demand Price. Competitive Conditions—Prohibitive Tax. Monopoly Conditions—Constant Costs. Monopoly Conditions—Increasing Costs. The Excess Burden of Partial Excise Taxes. The Limitations on the Partial Equilibrium Models. CONCLUSIONS.

32 GENERAL SALES TAXATION 425

ECONOMIC EFFECTS OF GENERAL SALES TAXES. SECONDARY EFFECTS OF GENERAL SALES TAXATION. ADVANTAGES OF GENERAL SALES TAXATION. DISADVANTAGES OF GENERAL SALES TAXATION. CONCLUSIONS.

33 THE TAXATION OF CAPITAL: COMPARATIVE ANALYSIS 435

THE TAXATION OF CAPITAL AND INCOME: A COMPARISON. IDEOLOGICAL ORIGINS OF PROPERTY TAXATION: The Physiocrats. The Ricardian Theory of Rent. The Single Tax and Henry George. The Modern Theory of Economic Rent. CONCLUSION.

34 THE PROPERTY TAX 447

THE DEFINITION AND CLASSIFICATION OF PROPERTY. THE ASSESSMENT OF PROPERTY VALUE. ASSESSED VALUES AND REAL VALUES. REVIEW AND APPEAL OF ASSESSMENTS. THE SETTING OF TAX RATES. ECONOMIC EFFECTS OF PROPERTY TAXATION: Effects of a General Capital Tax. Effects of a Specific Property Tax. Effects of Actual Property Taxes. REAL PROPERTY TAXES AND COLLECTIVE DECISIONS.

PART VIII. INTERGOVERNMENTAL FISCAL RELATIONS

35 FISCAL AND ECONOMIC ASPECTS OF FEDERALISM 465

INDEPENDENT FISCAL AUTHORITY. THE ECONOMIC ASPECTS OF FEDERALISM. ECONOMIC ASPECTS AND POLITICAL REALITIES. POLITICAL DECENTRALIZATION AND INDIVIDUAL CHOICE. INTERAREA DIFFERENCES IN FISCAL CAPACITY. INTERSTATE DIFFERENCES IN PUBLIC SERVICE STANDARDS. CONCLUSIONS.

36 FEDERAL-STATE FISCAL COORDINATION 482

SEPARATION OF TAX SOURCES. COMMON TAX SOURCES—SUPPLEMENTS, CREDITS, AND SHARES: Tax Supplements. Tax Deductibility. Tax Credits. Tax Sharing. UNCONDITIONAL OR BLOC GRANTS. CONDITIONAL GRANTS-IN-AID. FEDERAL GRANTS-IN-AID TO STATES AND LOCAL GOVERNMENTS: Federal Aid for Highways. Public Assistance Grants. Federal Aid to Agriculture. Education. Public Health Grants. Unemployment Compensation Administration. Housing. Remaining Grant-in-Aid Programs. CONCLUSIONS.

PART IX. TAXES, UTILITY RATES, AND USER PRICES

37 PUBLIC SUPPLY OF PRIVATE GOODS 503

PUBLIC SUPPLY AND INDIRECT TAXATION. THE PUBLIC UTILITY. THE USER PRICE AND THE TAX. THE DETERMINATION OF USER PRICE. ORGANIZATION OF PUBLIC ENTERPRISE. CONCLUSIONS.

CHAPTER PAGE

38 HIGHWAY FINANCING AND OPERATION: A SPECIAL CASE 517

TRADITIONAL ATTITUDES TOWARD THE PUBLIC ROAD. THE IMPACT OF THE AUTOMOTIVE REVOLUTION. THE HIGHWAY AS A PUBLIC UTILITY: Evolution of Highway-User Taxes. Growth of Earmarking. HIGHWAY TAXES AS USER PRICES: Gasoline Taxes. Vehicle Registration Fee. Third-Structure Taxes. Direct Pricing through Tolls. CRITERIA FOR HIGHWAY INVESTMENT AND EXPENDITURE. LOCATION OF RESPONSIBILITY FOR HIGHWAY FINANCING. THE SOCIAL COST OF CONGESTION. CONCLUSIONS

PART X. CONCLUSION

39 CONDITIONAL PROSPECTS AND PROJECTIONS 537

INDEX

INDEX 543

Part I

THE PUBLIC ECONOMY

Chapter 1 THE NO-GOVERNMENT ECONOMY

Few people enjoy being governed; almost everyone enjoys governing. This paradox in human emotions explains many of the problems that arise in any society concerning the functions and purposes of government. Democracy's philosophers suggested that government is best which governs least, and communism's sacred books speak of a withering away of the state. But the position of government, both relatively and absolutely, has continually grown more important in supposedly democratic countries, and the monolithic state of communist countries shows little sign of withering away. "Government" is, therefore, worthy of considerable attention no matter what our purpose. The old adage about the certainty of "death and taxes" is surely relevant and true.

Political theorists have long adopted the device of explaining the origin of government by assuming conjecturally that it does not exist. This has proven to be a useful expository device even if some of its critics have confused its methodological and its explanatory purposes. We shall not attempt to develop a theory of government here, but we shall find it helpful to use the no-government assumption as a starting point.

THE ORDERLY ANARCHY

If government did not exist, and this idea in itself requires considerable abstraction from reality, anarchy would prevail. One description of such a society, if indeed it could be called a society, would be chaos. This is probably the most accurate description, but it will not suit our purposes. In order to contrast the economic organization in a political order with that in the no-government setting, we shall have to assume an orderly or rather an ideally working

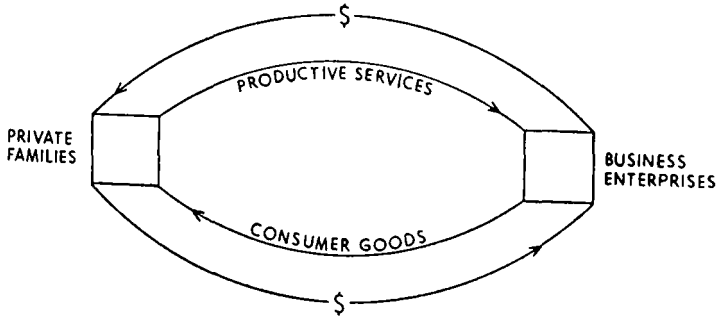
anarchy. Let us do this by saying that all individuals are reasonable and ethical in the sense that they respect the equal freedoms of each other. We also assume an existing structure of property rights. Let us then try to describe how the economy of such a society would work. As a matter of fact, this is precisely the sort of assumption about government which is made when elementary economics is presented to the college sophomore. This chapter may be taken as a review of the elementary principles of economic organization.

THE ECONOMIC ORGANIZATION

Individuals in such a hypothetical society would soon find it advantageous to conduct economic affairs through organized markets. Resources, human and nonhuman, would become specialized to particular employments, and business enterprises would emerge to fulfill the role of organizing production to meet consumer needs. The simplest model of this no-government economy may be presented in the "wheel of income" diagram shown in Figure 1–1.

FIGURE 1 1

The Wheel of Income



The economic units are of two kinds: individuals or families on the one hand, and business units or firms on the other. Trade takes place among these units in two broadly defined markets. These are the markets for consumer or final goods and services and the market for productive services. The bottom half of Figure 1–1 indicates the consumer goods market; the top half shows the productive services market. In the consumer goods market, private individuals or

families receive consumer goods and services from business firms. In the other market, the suppliers and demanders are reversed. Private people supply productive services (labor, land, capital) to firms. In a broad sense, therefore, looking at the whole wheel, private people "trade" productive services for final products. Firms buy productive services and transform them into final products.

Direct barter would be grossly inefficient, however, and some particular commodity would be agreed upon as an appropriate monetary commodity. Once selected, this "money" commodity would be used in the direct discharge of all obligations. The "money" would allow the structure of interlocking markets to be completed. Individuals would sell productive services to business firms for money, and, in turn, they would take this money and purchase from business firms final goods and services. The circular flow would be closed, and the economic activity of the community would be a continuous process.

Business firms exist with a view toward making profits. For this reason the firms will be guided in their decisions concerning the organization of production by the desires of consumers. The tastes or wants of individuals as consumers are the basic determinants of what the economy shall produce and how its resources shall be allocated among the many possible employments. The operation of the economy in this way is said to follow the principle of *consumer sovereignty*.

PRINCIPLE OF CONSUMER SOVEREIGNTY

As are all such principles, that of consumer sovereignty is an oversimplification in application to the way in which the no-government economy would really operate. Any complete description would require a careful enumeration of several qualifying factors, such as: inconstancy in consumer wants, persuasion by business firms, and the existence of uncertainty. This sort of discussion is not, however, needed at this point. The principle is useful as a starting point of discussion because it does provide an indication of the fundamental organizing influence in the no-government economy. Despite imperfections, the resources of the economy would, by and large, be directed toward the production of goods and services which individuals, expressing their desires as consumers, indicate a willingness and an ability to purchase.

The consumer's ability to purchase goods and services, and in this way his ability to direct the organization of economic production, is limited by the number of monetary units which he can command. And this, his "income," is in turn determined by his ability to sell his productive services to firms or to other individuals. The individual who is unable to earn income in the market place for productive services, and who has no accumulated wealth, cannot influence the organization of production at all. The economy organized purely on the basis of consumer sovereignty has, for these reasons, been called the "one dollar–one vote" system in contrast to the system of political democracy which presumably makes decisions, at least ideally, on the basis of "one man–one vote." The pure market economy, which is a shorthand name for an economy organized solely on the basis of consumer sovereignty, does not, therefore, respond to other than the pecuniary needs of individuals. This economy does not necessarily utilize its resources where they are most "needed" on some undefined nonmarket criterion of "need."

THE VOLUNTARY ECONOMY

What can be said in favor of and against an economy organized in this way? In the first place, individuals are free within the limits of their economic power. No individual coerces any other individual; a market transaction represents a wholly voluntary exchange from which both parties expect to receive benefits. The market economy is an organized method of securing voluntary cooperation among individuals. It is essentially a system of spontaneous order which arises out of the individual participation of numerous buyers and sellers. Resources are allocated to the many possible employments and proportioned within the separate individual employments; goods and services are produced and distributed without a direct central plan ever having been discussed, approved, formulated, or even contemplated. The first main advantage of this sort of economy is, therefore, that it is "free" or "voluntary."

The second main advantage is that the market economy incorporates a high degree of "efficiency." This means quite simply that the individually inspired motivation of consumers, workers, property owners, and business enterprises combine to secure an over-all economic organization which is not grossly extravagent in its usage of scarce resources available for disposition. Decisions are decentralized private decisions and, therefore, mistakes are private individualized mistakes.

SOCIAL JUSTICE, MONOPOLY, AND INSTABILITY

What are the disadvantages of this pure market economic organization, even in this hypothetical world of reasonable individuals? First of all, there is no assurance that the accepted standards of "social justice" will be met in the market-determined distribution of the total product of society. We shall not try to define "social justice" here; Chapter 14 will be devoted to a more adequate treatment of the many problems that arise in this connection. But if the market economy does not distribute the over-all product in a way that is acceptable to a great majority of the individuals, some attempts are likely to be made to modify this distribution. And this provides at least one important economic role for government.

A second major difficulty arises when it is recognized that individuals and groups may prevent the orderly working of the economy by securing economic power over particular submarkets. Monopoly is likely to emerge in the no-government economy, and insofar as this is present, the principle of consumer sovereignty is weakened. Monopoly presents the consumer with false alternatives from which to choose; market values no longer reflect resource values and, in this way, efficiency is reduced.

A third difficulty in this highly simplified no-government economy is introduced when we recognize that the tastes of individuals are highly changeable, and that this shifting of tastes applies to the monetary commodity as well as to everything else. A sudden shift of tastes in favor of holding larger amounts of money inactive will reduce the total money demand for goods and services. This reduction in money demand will, insofar as the system works well, cause prices to fall. But, if significant rigidities in the structure of produce and productive service prices are present, the system will not work well; the reduction in money demand may cause unemployment, more or less for long or short periods of time. This possible instability of the economy which causes resources to be unutilized is the third major difficulty in the no-government economy.

A BASIS FOR FURTHER DISCUSSION

This purely hypothetical and unrealistic model of the no-government economy was introduced to provide a basis for subsequent discussion. A rudimentary understanding of the way that the market economy functions is essential for an understanding of the effects imposed by the introduction of the governmental sector. This does

not imply that governmental economic activity constitutes in all cases an "interference" with the market economy. Government economic action can make the market economy work better or worse. The results depend on the particular action taken, as well as on the criteria for "better" or "worse" which are chosen.

SUPPLEMENTARY READING

The student who desires to review the principles of the market economy may consult Frank H. Knight, *The Economic Organization* (Department of Economics, University of Chicago) or, for a more elementary textbook, C. L. Allen, J. M. Buchanan, and M. R. Colberg, *Prices, Income, and Public Policy* (2d ed.: New York: McGraw-Hill Book Co., 1959).

Chapter 2 GOVERNMENTAL DECISION MAKING

The working of a hypothetical market economy in the absence of a government has been briefly discussed. But the purpose of this textbook is to present the principles of public finance, of the public, not the private economy.

THE SUBJECT OF PUBLIC FINANCE

The government, considered as a unit, may be defined as the subject of the study of public finance. More specifically, public finance studies the economic activity of government as a unit. In this respect, as well as in many others, we consider government to be an independent unit or entity, as a person.

In order to illustrate this, let us introduce an analogy. Suppose that we choose to study the economic activity of a particular individual, say Mr. Jones. There are several stages in our inquiry. First of all, we should try to find out how Mr. Jones earns his income and how much he earns. For example, he might work as a carpenter, a librarian, or a jet pilot. He might not work at all and earn income by clipping interest coupons. Secondly, we should seek to find out how he spends the income he does earn. He might be a gourmet who spends most of his earnings on fancy foods, or he might be an enthusiast for modern art. Or maybe he is a miser who spends very little and saves most of his income. All of this information would be gathered in the first stage of our inquiry into Mr. Jones' economic activity.

But we should want to know much more than this. We should try to learn something about the way in which Mr. Jones makes his *decisions* or *choices* among alternatives open to him. Why does he choose to work as a carpenter rather than as a mechanic? And why

doesn't he try to earn extra income on Saturdays? What criteria does he use in choosing among the things he buys? These are the questions which arise in the second stage of our inquiry. Since we could never read Mr. Jones' mind with predictability, the answers to some of these questions might never be revealed to the observer, but by studying his behavior and asking him questions we could learn a good deal. In addition, we might be able to construct models of his behavior which would be helpful in understanding it even though these models would not prove very useful in prediction.

The analogy with the study of the economic activity of Mr. Jones can be both helpful and extremely misleading when we come to study the economic activity of government. The first stage is very similar. In this we need to gather the "facts" about the public finances. We shall need to know just how the government secures its revenues (income) and how this revenue is spent. This means we need to know something about both sides of the government's budget account.

When we come to the second stage, however, we can see that some important differences arise. Just as in our study of Mr. Jones' activities, we want to know something about the way in which the relevant decisions or choices are made. We shall want to know why the government chooses to collect the major share of its revenues through the personal income tax rather than in some other way. And we shall want to know why the government spends $40 billion annually on defense instead of slum clearance. And why does the federal government collect $90 billion in taxes instead of $110 billion? To get the answers to questions such as these, we must examine the way in which government's decisions are made. But here the analogy with Mr. Jones breaks down. With Mr. Jones, we try to understand, as best we can, how a single mind makes decisions. But we know that government's decisions are made as a result of the interaction of many individuals working in some sort of political process. Therefore, any approach to the answers that we seek must consider the political decision-making process quite carefully.

There is still a third stage of inquiry where our analogy with the study of private economic activity breaks down. If we study the economic actions of *one* individual or one firm *among many*, we may pay little attention to the effect or impact of decisions made upon other individual units in the group. A change in the behavior of Mr. Jones will be so small in its impact on the alternatives open

to other individuals of the group that we may neglect these in our inquiry.

Not so when we come to study government's decisions. The government is important enough in relation to the whole economy to make it necessary to study the impact of its decisions on the behavior of individuals and firms in the private economy. As a matter of fact, the questions raised in this third stage of inquiry have traditionally been central to the study of public finance. There are two parts or subdivisions of inquiry here. First of all, governmental activity will exert some aggregative effects on the workings of the economy. By changing the conditions under which individuals work, consume, and invest, government can influence the size of national income, employment, and the general price level. We must consider such questions as: What will happen to national income and employment if major disarmament occurs? What effect did the budgetary deficit of fiscal 1959 have on the national economy? Secondly, the nature of governmental activity will have an effect on the purely private decisions of individuals and families. How are individuals affected by an increase in the income tax? What is the effect on incentives to work and to save? How is the long-run rate of saving affected by an increase in social security benefits? These two sets of questions arise in the third stage of inquiry. In one sense, the whole approach is shifted in this stage. For no longer is the government the *subject* of study. Rather the individual units in the private economy become the subject with government's decisions assumed as data.

In summary, we have to study three stages in our inquiry into the public or governmental economy. We have to ascertain the facts; we have to examine the decision-making process; and, finally, we have to study the impact of the public decisions made on the position and the behavior of individuals and firms in the private economy.

WHAT IS GOVERNMENT?

From the discussion of the preceding section, it is clear that the work done in the second and third stages of inquiry can be influenced by the student's conception of government itself. What is the state? This is the fundamental question in political theory, and we cannot attempt a discussion in this textbook. Some answer to the question, explicitly made or implied, must, however, be given before the field of public finance is properly outlined.

There are essentially two ways in which the question may be answered. The state can be considered literally as a unitary being for purposes of our study. In other words, the government can be considered as a person quite similar to the way in which a business corporation is treated in the legal structure of the United States. In other writings, I have referred to this as the "organismic" conception of government. If government is considered as an independent unitary being, its decision-making processes can be considered similar to those of a private person, and the same sort of reasoning that we use to describe the behavior of a private person can be applied to government.

Private economic activity is presumed to be directed toward fulfilling certain goals which may be summed up under the term "utility." And individual economic actions are presumed to be based on some utility maximization criteria. To be sure, it is impossible to say positively that individuals do, in fact, try to maximize some such thing as "utility." But by making this assumption about their motivation, economists have been able to make certain predictions about individual behavior which do seem to be borne out by observable facts.

The difficulty in applying this approach to governmental decisions is clear. How could "social utility" or "general welfare" be defined? Any definition must be arbitrary. This makes it very difficult, if not impossible, to judge various collectively made decisions on the basis of some "social utility" criterion. Does an increase of $3 billion expenditure on urban renewal projects, the expenditure to be financed by $3 billion in new taxes, represent an increase in "social utility" or "general welfare"? In the case of the single individual making decisions we can conceive of his preferences as being in some way integrated so that he does choose among alternatives consistently. But when we consider the state, government, the existence of a "fiscal brain" possessing an integrated preference system seems wholly unrealistic.

In spite of this, we may proceed to discuss the public finances by using some such "fiscal brain" assumption. If the state is not democratic, and if society is ruled by a despot, we may reduce public finance to a situation closely parallel to private finance. If Mr. Jones of our earlier example were to be absolute dictator of the country, the study of his private economic activity would also be the domain of the study of public finance. His income would be the state's income; his spending would be equivalent to the government's spend-

ing; and it would not be difficult to conceive of Mr. Jones making all governmental decisions in accordance with some rationally integrated plan.

But we are rarely interested in studying the public finances of a government organized as a despotism. Other models of political organization, however, may allow the "organismic" assumption to be employed quite appropriately. If the government of a country is under the control of a single-minded group or party, the unitary framework is useful. Here the study of collective decisions reduces to that of ascertaining the party's meaning of "social welfare" and then the judging of revenue and expenditure decisions on this basis.

We are interested primarily in studying the public finances of democratically organized governments which are not characterized by single-minded ruling groups. Here the unitary or organic assumptions do not fit well, but, on occasion, it may still be useful to analyze fiscal problems in this framework. We shall see this clearly in Part IV when we talk about the problems of budgeting.

First of all, it must be recognized that any rigid attempt at defining "social welfare" must be arbitrary. But failing this, we may proceed to talk about better and worse allocations of revenues and expenditures. By making certain plausible and reasonable assumptions about utility and welfare, we may be able to reach conclusions which are accepted by the great majority of individuals. For example, the earlier scholars in public finance assumed that individual utilities were measurable and that the utilities of separate individuals could be added up to get a total "social utility." If this were possible, the obvious goal for taxation would be to reduce social utility as little as possible. On the basis of reasoning such as this, so-called "principles of taxation" were constructed, principles which still are influential in providing support for current tax structures. It is now widely accepted that this measurability and comparability of utility was an illusion. It is impossible to compare the utilities of Mr. Jones and Mr. Brown.

Nevertheless, we may be able to make certain specific, and admittedly arbitrary, assumptions about utility. We may assume that Mr. Jones and Mr. Brown, and everyone else, are identical in their capacities as pleasure machines. We know that this assumption violates reality, but we may still find it useful as a basis for discussion. Secondly, we may assume that the additions to total utility caused by the addition of incremental units of income diminish as more

income is added. In more technical terms, we assume a diminishing marginal utility of income for each individual. This assumes that Mr. Jones, who has $10,000 already, will not get as much additional enjoyment from an additional $100 as will Mr. Brown, who only has $1,000 with which to start.

On the basis of specific, although quite arbitrary, assumptions such as these, certain "principles" or guides for tax and expenditure decisions may be derived which may be quite widely accepted by individuals in the society. In other words, people may act *as if* these assumptions are true representations of reality.

A second approach, which still utilizes the organic or unitary conception of the state, makes no attempt to add up individual utilities or welfare to get "social utility." This approach essentially assumes that something defined as the "public interest" does exist quite apart from the interests of individual citizens. The most important, and currently relevant, example of this approach is to be found in discussions of defense expenditure. Here it is presumed that the "national interest" demands that huge outlays be made on armaments. And the efficiency of the federal budget is judged somehow on the basis of whether or not this rather vague conception of "national interest" is followed. We shall discuss this approach more fully when we come to talk about defense spending more in detail.

A third approach, still within the unitary conception of the state, has the advantage of being straightforward. The student defines "social welfare" in terms of an explicitly stated preference scheme. He introduces his own preferences deliberately into the picture and judges revenue and expenditure decisions on his own estimates of "national advantage" or "public interest." This approach is useful only insofar as the student can get other individuals to agree. As a student of the public finances, you may feel that the national interest would be increased by a reduction in highway expenditure and an increase in the outlay for education. You arrive, therefore, at the conclusion that such a shift should be made. But so long as other individuals are free to think otherwise, your own estimation will be of little value. The point to be made here is that all such evaluations are inherently personal, not scientific. Therefore, little can be done in the way of setting up universally valid criteria for judging actual governmental action. Little can be done toward setting up "principles" of public finance.

THE GOVERNMENT AS INDIVIDUALS

We approach government differently when we begin to consider it, not as some organic or unitary being which acts independently, but as a means through which private individual citizens make decisions collectively. Here we immediately discard as irrelevant all attempts at defining "social utility" or "social welfare" independently of individuals' own estimates. We try instead to understand more fully the manner in which individuals make decisions relating to collective activity. We try to examine the conditions under which individuals will freely choose to sacrifice privately enjoyed goods and services in return for publicly provided goods and services.

This conception of the state or of the government seems clearly the more appropriate one when we are studying the public finances of democratic countries. Despite the fact that democracy in its ideal form is rarely, if ever, present, the process through which collective decisions are made bears a closer resemblance to this ideal than to the opposing one. Ideally, of course, democracy implies that each citizen participate in the decision-making process of government. The New England town meeting provides our closest real-world example. But the governmental entities in which we are interested are not New England townships. Rather they are the larger units which utilize the much larger share of economic resources in carrying out their functions. Here we immediately recognize that democracy in decision making means something far removed from universal participation. Individuals participate only insofar as they choose among candidates for public office. Representative government becomes the ideal type. And even this must be seen to be an ideal which is rarely realized. Actual decisions concerning the collective usage of resources are made by the legislature, the executive, the bureaucracy, and the public, with each group participating continuously and both directly and indirectly in the final outcome. The discipline of political science is primarily concerned with studying the whole process through which decisions finally emerge. This involves the study of voting, of political parties, of bureaucracy, of administrative structures, of leadership, of public opinion, and many other aspects of the collective choice mechanism.

The study of the public finances, which this book proposes to outline, is not the whole study of political science. Obviously we cannot discuss the foregoing aspects of the decision-making process in democratic societies. For our purposes it is sufficient to point out

the complexity of the political process, and to indicate that any discussion of the public finances must be based on a full recognition of this complexity. Lacking any criteria for judging results, which we reject when we discard the organic or unitary framework, and recognizing the complexity of the decision-making process itself, we shall not be able to derive "principles" of public finance in the traditional or orthodox sense. We shall, in the chapters that follow, derive "principles" only insofar as these arise out of positive analysis. No attempt will be made to evaluate separate configurations of the fiscal structure on the basis of "better" or "worse."

Only in one chapter, when we return to consider the decision-making process more carefully, shall we try to set up criteria for choosing among the separate taxes and among the separate possible budgetary allocations. And our criteria here will be simply that of making the decision-making process itself work better, not some arbitrary criteria of "justice," "social welfare," or "national interest."

Chapter 3 GOVERNMENT AND THE MARKET ECONOMY

Let us recall the no-government model of the economy presented in Chapter 1. Assume now that this economy is working perfectly; there is full and free competition; there is stability in employment; and there is widespread acceptance of the distributive results. In this chapter we want to examine the basis for the rise of government even under such restricted and idealistic conditions. We shall discuss the concept of *collective* as contrasted with *private* goods and services.

Let us assume that our hypothetical society consists of fishermen living on an isolated island. After the experience of several boats having run aground on surrounding rocks and shoals, the need for a lighthouse on the island will become clear. Actually, the existence of a lighthouse will be of great benefit to each fisherman. But the private market economy, in its simplest form of operation, might not get the lighthouse built. One enterprising individual might consider building the lighthouse and then licensing rights to use the beams to the several fishermen. But since the boats can secure guidance from the lighthouse whether their owners pay for the privilege or not, the owner of the lighthouse would have no way of restricting usage of his product. He could not really sell off individual shares of the benefits to separate fishermen.

COLLECTIVE GOODS

A lighthouse of this nature is the classic example of a *collective* good. Once it is built, each fisherman can benefit from its services; and this is true whether it is built by one fisherman for his own benefit or whether all join in its construction. The distinguishing characteristic of a collective good is the *indivisibility* of the services

rendered. In the example here, if one boat secures the benefits from the lighthouse, all boats may secure benefits. There is no easy way in which the services rendered by the lighthouse may be specifically directed toward particular boats.

The sensible manner for the community of fishermen to secure the lighthouse is for them to organize *collectively*. The organization may be a voluntary one. The fishermen in our example may join together and work out a plan whereby each one of them contributes a determined amount toward the construction and operation of the lighthouse. Each fisherman will benefit, and the community will clearly be better off. The precise division of the costs may be a matter for much bargaining and discussion, but so long as the lighthouse is genuinely beneficial, some plan of sharing expenses should prove acceptable to all parties.

In order for the organization to be wholly voluntary, however, one of two things must be present. Either the fishermen must have the right to force an unreasonable man to move off the island, or there simply must be no unreasonable men among the group. If neither of these conditions is met, the voluntary arrangement will break down. This is easy to demonstrate. Suppose one unscrupulous fisherman says to himself: "The others are going to organize and build the lighthouse; once it is built I can secure the benefits as well as they. Therefore, why should I contribute anything? I can simply wait and secure the benefits free of charge." The first alternative would be for the group to force such individuals outside the group. This is, for example, the way in which a private golf club operates. Once constructed, the benefits are indivisible among the members of the group. But if a member does not carry his share, he is dropped from the club. This alternative is not, however, open to units of government. Therefore, we had best drop this possibility from our consideration in discussing how government activity tends to arise. The second alternative is simply that such unreasonable and unethical men do not exist. We all know this to be unrealistic. Surely, under the conditions outlined, some individuals would take exactly the position illustrated.

For these reasons, the organization will normally introduce coercion or compulsion to force all members of the group to contribute. Individual beneficiaries from the lighthouse will agree to contribute toward the project only insofar as they are assured that all individuals in the group will be forced to bear some share of the common burden of payment. In a sense, individual members of the group

will agree to be coerced in order to insure an acceptable sharing of the burden.

With the aid of this very simple example, we have been able to show how individuals would join together to do something *collectively* rather than privately, and we have shown why this organization would tend to become *coercive*. The organization would, therefore, take on the essential characteristics of government. We have shown, therefore, how government might arise for purely economic reasons.

THE RANGE OF COLLECTIVE GOODS

When we drop our assumption about the group being composed of island fishermen, and instead introduce a bit more reality into our model, we can see that the idea of collective goods may be extended. Many of the traditionally accepted functions of government in the Western world may be explained, in whole or in part, through this distinction between *collective* and *private* goods. We may now try to examine these functions more carefully.

The Common Defense

Defense against external enemies seems to fall squarely within the collective goods category. The early settlers soon found that collective efforts were required to build forts. A fortress strong enough to withstand attack was beneficial to all members of the group. Its services were *indivisible*.

Quite similarly the services which we now receive from the national defense establishment are indivisible. The addition of an ICBM or a nuclear-powered submarine adds to the over-all deterrent threat. It is impossible that I could receive the benefits of this build-up in defense strength without my neighbor, at the same time, receiving a similar benefit.

Law and Order

The provision of internal defense, or defense of individuals against the predatory behavior of others of their own group, belongs in a category of collective goods similar to external defense. The system of law enforcement, of the courts, and of judicial processes is beneficial to all individuals in the group. The ordinary and accepted pattern of social life takes these common benefits more or less for granted. And social intercourse of various sorts can proceed in ac-

cordance with reasonable expectations of stability because this inherently indivisible service is provided by government.

In the political structure of the United States, this function is shared between the central and the subordinate units of government. And, in any case, this function is rather unimportant in terms of the economic resources which it absorbs. Therefore, in the study of public finance, which concentrates attention on the economic aspects of government, the attention given to this particular collective service will be much less than would be deserved in any more comprehensive consideration of government and its functions. As an illustration of this, the United States Supreme Court, as a vital part of the whole system of law and order, is far more important than might be indicated by the relatively small proportion of the federal budget allocated to its maintenance.

Monetary Stability

Although it is not so generally recognized because governments have rarely fulfilled their role appropriately in this connection, the provision of monetary "order" is also an important collective service. Each member of society benefits from a monetary system which insures against unpredictable changes in the value of the currency unit. The whole process of economic exchange is facilitated by governmental action designed to insure such stability. We shall have occasion to discuss this particular function of government at some length in Part II of this book. It is especially important in the study of public finance because one of the means used to accomplish monetary stability utilizes the government budget.

Regulatory Measures

Many specific regulatory measures provide genuinely collective services. For example, governmental requirements that a certain air traffic pattern be followed by all users of the airlanes are beneficial to the whole population. The pure food and drug laws allow all individuals to carry on the process of food consumption without great fear of poison. Traffic regulations on our nation's highways and streets provide an additional example. The enforcement of the rule that automobiles shall be driven on the right side of the road is an indivisible service beneficial to all road users. Many other types of regulatory activity fit this pattern.

As in providing law and order, provision of regulatory services of the kinds mentioned may not be significant in terms of budgetary allocation. The enforcement of traffic regulations is a relatively small proportion of the nation's total outlay on roads.

POLITICAL BOUNDARIES AND INDIVISIBILITY

The boundaries of the political units may not, of course, coincide with the range of the indivisibility characterizing a genuinely collective good or service. For example, the provision of a lighthouse at St. Marks, Florida, may be a collective service under any rigorous and careful definition of this term. But the mere fact that this is a collective service does not suggest that all citizens of the United States, or even of the state of Florida, benefit from the lighthouse. The range of indivisibility may be considerably more limited than that indicated by the boundaries of the political unit. Thus, it may be quite appropriate for the financing scheme to reflect this fact.

Another example may be useful in bringing out this often-overlooked point. A few years ago swimming and sunbathing on the Florida beaches was made much less enjoyable by a mysterious pollution of the water by what was called the "Red Tide." The elimination of this troublesome phenomenon clearly represents a collective service. The benefits from improved bathing accrue to all beach users, and no one could secure these benefits to himself. From this the conclusion can be drawn that the investment in research to eliminate the Red Tide should be financed collectively. But since the potential beneficiaries include only the beach users, and not the whole of the state's or the nation's population, an appropriate limitation on the financing scheme is suggested.

This amounts to saying that the fact that a good or service is *collective* in the sense that its benefits are *indivisible* suggests only that some collective action be taken to provide it. The fact does not, in itself, suggest that all citizens of the political unit in question must be called upon to support this service.

PUBLIC FINANCING AND PUBLIC OPERATION

At this point it will be useful to make a distinction between the public or governmental support or financing of a particular service and the actual governmental operation in carrying out the provision of the service. This distinction has seldom been made clear.

By showing that a particular service fulfills a *collective* need, or sufficiently so that public action to guarantee its provision is desired, we may justify collective *financing* of the service. The actual operation of the function may be done either directly by governmental agencies or by private firms hired by governmental funds. This latter decision should rest solely on efficiency grounds. If the task can be done more efficiently by direct governmental action, obviously this should be the method adopted. On the other hand, if the task can be more cheaply performed through contracting out to private firms, this arrangement should be accepted.

Examples are not difficult to find to illustrate the point here. In the armaments race, an operational intercontinental ballistic missile is the collective good needed. The Armed Services may try to produce one directly at their own research facilities, such as the Army did at Redstone Arsenal, or they may contract with private research organizations for the same purpose. Auditing of a local government's books is a collective service. But many such governments find it much more efficient to hire outside firms to conduct such an audit than to employ their own auditors.

QUASI-COLLECTIVE GOODS AND SERVICES

The earlier listing has clearly not exhausted the categories of goods and services which are, in fact, provided publicly through government. Governments do many other things, but as we move beyond those goods and services which are *collective* in a relatively pure sense, a different classification is suggested. For this reason we have chosen to set up a category of quasi-collective goods and services. These take on collective characteristics in that some of the benefits provided are indivisible, but they assume also characteristics of private goods and services in that a portion of the benefits are divisible.

Many examples come to mind immediately in this category. Public expenditure for education is obviously of this sort. The whole community benefits from the advantages of having a well-educated citizenry. To this extent, the services provided by public expenditure on education are indivisible. But private families also benefit directly when their children's education is publicly financed. This part of the service provided by public expenditure on education is divisible.

Municipal parks provide a second example. Citizens of New York benefit generally from Central Park. But those property owners adjacent to the park, and those strollers who use the park secure private benefits from its availability. Expenditure for slum clearance is a third case. The whole group secures indivisible benefits from the clearance of slums. The breeding places of disease, crime, and delinquency are presumably eliminated. But clearly those individuals subsidized in the process of slum clearance also benefit directly from the expenditure.

The great and continuing debate concerning the appropriate extent of governmental activity is centered on the functions falling within this category. The relative importance of the weight given to the *collective* and the *private* aspects of the particular services in question will determine the individual's attitude on the appropriate location. If the collective aspects are deemed to be of overriding importance, as with expenditure for education, then the majority of citizens will usually support collective expenditure to provide the service. On the other hand, if the collective aspects are deemed to be rather insignificant relative to the private aspects of the service, no collective action will be taken.

Individuals, and communities, can disagree sharply on the relative importance of collective and private attributes of a particular service. Thus, we find different governments doing different things. A good example is provided in the contrast between the British and the American attitude toward medical care. The National Health Service in Great Britain is both publicly financed and operated, and individuals who receive benefits from the provision of medical care secure these free or at very low cost to themselves individually. The British people have apparently decided that the indivisible benefits to the community at large from having a healthy populace outweigh the disadvantages which arise out of public operation. On the other hand, medical care is, for the most part, privately provided and financed in the United States. The ordinary operation of the market economy provides medical care to those who pay for it. This does not suggest that collective benefits are wholly absent. But the difference in institutions does suggest that the people in the United States consider the collective properties of medical care to be less important than the disadvantages introduced by direct public provision.

PRIVATE SERVICES PUBLICLY PROVIDED

From the previous discussion, it is clear that there is no sharp dividing line between goods that are properly within the province of government and those that are within the province of the private market economy. As we shall discuss more fully in the next section, almost any service has both collective and private attributes. But a third category of relatively private goods may be introduced which are sometimes provided by government. These goods are private in that benefits are largely *divisible* among users.

An examination of the activities which governments actually do perform will indicate that many such services are carried out by government rather than by the market economy. But the interesting point here is that these goods and services are normally *financed* as if they were private. Examples are easy to come by. Government provision of postal services is perhaps the best. The beneficiaries of this service are the users of the system, and the benefits are almost wholly divisible. Governments operate the postal systems as if they were private in that the major share of the financing arises out of user charges. This is as it should be. Some governmental regulation of postal activity is, of course, in the collective interest. All potential users of the system must be granted access to the facilities; users must be guaranteed against fraud. But these involve the regulations of the way in which the service is operated, not the support of the service itself. The almost universal provision of postal service by governments can best be explained as a historical accident.

The second service which is primarily private but which is provided by government is that of highway facilities. Here the services are clearly divisible, and the actual operation and construction of the facilities is financed by charges on users. As with the postal services, there are collective aspects of the regulation of highways and roads. But again, universal public operation seems to stem from historical developments rather than from the distinctly collective attributes of the service provided.

Postal and highway systems are essentially *public utilities*. That is to say, the benefits of such services are divisible among separate private users, but, for some reason or another, there are quite legitimate reasons for collective or governmental interest in the regulation or operation of the industry. We shall have occasion to discuss the category more fully in Part IX. Postal and highway systems are operated directly by almost all governments. Other public utili-

ties are handled differently by different communities. In European countries, both the railroad system and the telephone and telegraph system are normally governmentally operated. In the United States, these systems are privately operated but subjected to governmental control.

COLLECTIVE INTEREST AND MARKET ACTIVITY

We have classified the goods and services normally provided by governmental units in three groups: genuinely collective services, quasi-collective services, and publicly provided private services or public utilities. These are useful categories, but the dividing lines among them and between the latter and those services provided ordinarily by private market organization should not be overly emphasized. Almost every good and service, whether supported by government or by the market economy, has both collective and private characteristics. Many goods provided wholly through the private market mechanism have genuine collective aspects. For example, this country has no major governmental subsidy to the arts. Yet the New York theater is certainly beneficial to all citizens of the area whether they attend or not. Indivisible benefits arise from the mere fact that a cultural tradition is being maintained and developed. In this sense, therefore, there may be said to be a "public" or collective interest in many phases of market activity.

This should not, however, be taken to suggest that some governmental or public interference with private market activity is justified in such cases. So long as the market itself functions to insure a sufficiently large production of those goods and services in which there is a collective interest, the indivisible benefits are secured along with the divisible ones, and society secures a net gain at no additional cost.

THE SOCIAL SERVICES

In the preceding sections we have discussed the economic basis for collective provision of goods and services. We assumed at the outset that the economy worked well, and that people were, by and large, satisfied with the distributive results. When we recognize that, in the real world, the distribution of goods and services is not always that which people would desire to see, we find another basis for governmental action. This opens up the whole area of the so-called

"social services," such as free school lunches, old-age assistance, aid to the blind, aid to the indigent, and many other categories.

Insofar as the need for such services arises merely because the income and wealth distribution is considered to be unsatisfactory, no collective action to provide real goods and services is required. A system of publicly financed transfer payments is sufficient to redress the prevailing inequality in income and wealth distribution to the extent desired. A transfer payment is defined as a transfer of purchasing power through the fiscal process. No governmental purchase of real goods and services is introduced. The whole issue of the relation between the fiscal system and income distribution will be discussed more fully in a later chapter.

The argument for the alleviation of poverty is used, however, to justify other than transfer payments. It is used in defense of many of the so-called "social services." The argument runs as follows: "The position of the poor and indigent can be improved to a greater extent by providing them directly with goods and services rather than by transferring income to them. By providing the poor with decent housing, for example, we can improve their lot more than by providing them with an additional income which they might use for wasteful purposes." This is an extremely dangerous argument which one is wont to slip into inadvertently. It presumes that the poor are incapable of making their own decisions concerning the spending of income, a presumption which seems to be contrary to the idea that each individual should be free to make mistakes. Nevertheless, this is a familiar argument and has a great deal of intuitive appeal in popular discussion. Many goods and services are provided by government under this reasoning, and, perhaps more importantly, government provision of goods and services, which can quite legitimately be justified on the grounds that they are genuinely collective in the sense discussed previously, is sometimes erronously supported in this way. Public expenditure on education is often supported on the argument that without it the poorer families would be unable to educate their children. If this were all there is to it, the problem could be solved by a system of income transfers to the poorer families. The real basis for support for public expenditure on education lies in the fact that the indivisible benefits to society are important over and above the privately enjoyed benefits received by the families of the children concerned.

MISCELLANEOUS GOVERNMENT SERVICES

In this chapter we have tried to discuss some of the economic reasons for the provision of public services. We have made no attempt to exhaust the range of expenditures which governments actually do make. Many public expenditures arise for no economic reason that is apparent. Governments are supported in their decisions to subsidize particular groups within the society, for example, veterans. Or, a particular industry may be subsidized out of public funds for any one of several reasons, for example, agriculture. Still other government expenditures may arise because of prior spending beyond current means; the interest on the national debt has recently become a major item in the federal budget. In another important role, governments have assumed the job of bearing much of the risk of individual members of the social group. The social security system is best explained in this way.

There remains to be discussed a whole range of miscellaneous public services at each level of government—federal, state, and local. Many of these will be introduced at appropriate points in the more detailed discussion of the chapters which follow. This chapter has been aimed, not at cataloging all public services, but rather at providing the student with an introductory basis for understanding the economic reasons for public activity.

SUPPLEMENTARY READING

For a more sophisticated discussion of the economic basis of governmental activity, the student should read R. A. Musgrave, *The Theory of Public Finance* (New York: McGraw-Hill Book Co., 1959), Chap. 1.

Chapter 4 THE DEVELOPMENT OF THE PUBLIC SECTOR

One obtrusive fact has been threatening to overwhelm the discussion in the preceding chapters. Government, as such, exists, and its activities, whether subject to reasonable explanation or not, are extremely important in shaping the lives of individuals. We must now take explicit account of this fact and attempt to place some quantitative significance on it.

A historical approach is suggested. We shall trace the growth of the collective or public sector of the economy in order to be able better to understand the current quantitative significance of this sector.

In the discussion to this point, we have been able to speak about "government" as if there were only one unit affecting each citizen. The political structure of the United States is federal. Not one, but two or more units of government affect the individual citizen simultaneously. The individual possesses dual citizenship and dual loyalties. The federal, or central, government must be distinguished from the state governments, which, in turn, must be distinguished from local units: counties, townships, municipalities, school districts, and so on. In studying the growth of the public sector, we shall be interested in seeing how total governmental activity has expanded at all levels, but we shall also want to see how this activity has been divided among the separate units.

THE IMPACT OF GOVERNMENT

As was pointed out in the preceding chapter, general regulatory activities must be undertaken by government. It is difficult to conceive of a private economic organization functioning outside some political framework. In this sense, therefore, almost every economic

decision is affected by government. And even small differences in the structure of political regulations can exert major influence on the way in which the market economy carries out its functions.

The very pervasiveness of government as provider and modifier of the general regulatory framework, "the rules of the game," within which private individuals and firms carry on their private market activity makes attempts to quantify or measure the total impact of government rather fruitless. Only detailed investigation of the whole institutional and legal structure can provide clues to the over-all importance of government in the life of a society.

For our purposes, a more restrictive concept seems appropriate. Some general meaning can be attached to the economic importance of government quite apart from its importance as the general rule maker for the social structure. The Supreme Court of the United States must, of course, be given an important place in any study of the total effect of the government in this country. But, in the more restricted sense, the direct economic importance of the Supreme Court, *per se*, is very small. This distinction between the *direct* economic significance, which can, to some extent, be measured, and the *indirect* effects, which cannot be measured readily, should be emphasized.

WHAT DO WE WANT TO MEASURE?

Before plunging carelessly into the many statistical series which might be introduced, it will be helpful to state specifically what we should try to measure. Four things are suggested as possible indicators of the direct economic importance of governmental activity: (1) the value of governmental services, (2) the real cost of governmental services, (3) the extent to which collectively made decisions replace private or individual decisions, and (4) the extent to which resources are organized by the market economy or by the government.

The search for a completely suitable measure of the value of governmental services must be abandoned at the outset, although some aspects of the problem will be discussed in the Appendix to this part of the book where the treatment of the governmental sector in national income accounting is examined. Different goods and services may be added together meaningfully only if there exists some common denominator to which they can be reduced. In the market economy, prices provide a means whereby the values of separate goods

and services can be added together to secure a total measure of gross national production or national income. But prices are not directly set for more than a small fraction of public goods and services; only divisible public services can be properly priced, and as the last chapter indicated, these comprise only one category of all public services. The only meaningful way of adding up the separate public services is to use dollar costs. And it is at once evident that the cost of a particular public service may be a poor measure of its significance to the total economy.

The second quantity which might be measured is the real cost of governmental activity. This cost should measure the opportunities which the community forgoes in order to secure public services, opportunities which may be conceptually measured in units of private goods. The opportunity cost of a *given* quantity of public services is defined as the alternative goods and services which the community forgoes in order to secure this *given* quantity. This opportunity cost does not indicate the total value of additional private goods and services which would be made available if government were to be disbanded. Quite clearly, the conditions here would be modified in such a way that any comparative measurement is unthinkable. The point can be neglected if we think of measuring the real or opportunity cost of *changes* in the size of total governmental activity rather than the cost of *total* governmental activity.

In measuring opportunity costs, or real costs, of governmental services, money figures for cost may not be at all meaningful in certain cases. In normal periods of high employment, money costs are meaningful because they reflect the prices paid to resources to attract them into the production of the publicly provided goods and services. However, during periods of deep depression when unemployment of resources exists, the real costs of putting these resources to work may be zero or very low. This qualification must always be kept in mind when using money costs.

MEASURES OF GOVERNMENTAL ACTIVITY

Total Governmental Expenditure

This is a measure of governmental activity that most readily comes to mind. And it does provide a helpful, and readily available, index to the direct economic importance of government, especially when it is used to compare various levels of government over relatively short periods of time. Unadjusted figures for total pub-

lic expenditure will, however, reflect changes in prices along with changes in government's real share in economic activity. This difficulty can be eliminated by deflating the crude figures by some index of prices. This will produce a series for *total governmental expenditures in constant dollars*. It may also be desirable to adjust for population changes. If the membership in the group is changing rapidly, a *per capita* measure of the public sector may be needed.

Some series for government expenditure, as adjusted, should provide the best measure of the real cost of governmental activity during all periods except those characterized by significant unemployment of resources. Government expenditures are sometimes classified into two categories: *productive* expenditures and *transfer* expenditures. The first includes a measure for government's purchases of real goods and services, whereas the second includes transfers of purchasing power from some individuals to others. Thus, federal outlay for missiles is a productive expenditure; social security payments are transfer expenditures. On the basis of this classification, it might be argued that the figure for total governmental expenditure tends to overstate the real costs of governmental activity and that this is better reflected in the figure for productive expenditure alone. This seems incorrect. The real cost of public activity is supposed to provide a measure of the value of private goods and services sacrificed in order to secure the benefits of the public activity. Taxation imposed upon some members of the group is the real cost of securing the benefits of subsidizing other members of the group. This seems to be a real cost of government quite as much as direct outlay on tanks, planes, and paper clips. For the purposes of estimating the real costs of government, the distinction between productive and transfer expenditures is not a useful one.

Governmental Resource Absorption

The exclusion of transfer expenditures from the total seems desirable, however, if the purpose is the third one listed previously, that of measuring the extent to which collectively made decisions replace private or individual decisions in the economy. Although governmental transfer expenditures clearly affect the over-all allocation of economic resources, so long as private individuals carry out the final act of spending for goods and services, the organizing principles of the market economy are allowed to operate (within a specific regulatory framework). The principle of consumer sovereignty,

as appropriately modified to account for real-world imperfections, remains in force. The transfer payment modifies the distribution of economic power, but only secondarily does it affect the organization of economic activity. It seems useful, therefore, to examine the comparative growth of governmental resource absorption.

Government Employment

It may also be desirable to measure the extent to which the market economy or the government actually organizes production of goods and services. This is a slightly different thing from government resource absorption. Here the appropriate figure will be that for direct government employment of economic resources. If the government purchases final goods and services from private firms, these goods and services are still produced in the organized market economy and the firms presumably are guided by the profit motive. Only if the government employs productive resources with a view toward its own production of final goods and services is this aspect of market organization replaced by collective activity.

The distinctions among total governmental expenditure, resource absorption, and government employment should not be overdrawn. By a reorganization of public activity, particular public services may be included in one or all of these categories. A single illustration will indicate this and, at the same time, clarify the distinctions made.

We know that the federal government operates many veterans' hospitals throughout the country. Total expenditure on providing hospital services shows up in our accounts under total governmental expenditure; the value of total goods and services directly purchased by government in the performance of this function shows up in the second category for resource absorption, and the men hired at the hospitals are counted in federal employment. Let us now suppose that a policy change dictates that all of the veterans' hospitals be sold to private firms who will then operate them under contract to the federal government, and that these firms will supply hospital services to qualified veterans. This will eliminate the veterans' hospitals item altogether from the third category. Employees would no longer be listed as working for government, but for private employers. As still a further policy shift, now let us suppose that the government decides to provide qualified veterans with hospitalization subsidies and allow these veterans to purchase the needed services directly from private hospitals. Here the veterans' hospital item would show up

only in the total expenditure category. The payments listed would be transfer payments only; no governmental purchases of goods and services would take place.

The illustration indicates that the organization of the public service is all-important in influencing its place in the accounting scheme suggested. For this reason, the differences should not be overemphasized. They are, nevertheless, important. The organizing forces of the market economy are utilized to a considerably greater extent in the third institutional structure than in the second, and to a considerable extent more in the second than in the first. In some cases, the shifting of institutional arrangements can lead to major improvements in efficiency. Here is a field in which research by experts may lead to useful results. This aspect of governmental expenditure will be discussed further in Chapter 18.

Government Activity Relative to Gross National Product

The foregoing measures provide some indication of the absolute importance of government activity. Standing alone, they tell us little or nothing about the governmental sector of the economy relative to the private sector. In a progressive, growing economy, it should be expected that the public sector will expand along with the private sector. The important question concerns the relative rates of growth over time. For this purpose, it is desirable to reduce the absolute figures to percentages of *gross national product*, the best over-all measure of the level of total economic activity.

Gross national product is defined as the total value of all goods and services produced during the relevant time period under consideration. Of course, many measurement problems arise. Most of these need not concern us here. Some of the more difficult of these problems involve the way in which government services are to be included. As has been indicated, no market value exists for many public services in the sense that this applies for privately produced goods and services. Government services can only be added in at cost. But other issues arise. Should or should not transfer expenditures of governments be included? Should government services be treated as final consumption items or as productive services instrumental to the production of private services? A few of these issues will be discussed more fully in the brief appendix to this part of the book. For the factual measures developed subsequently, we shall incorporate figures for gross national product as this is interpreted by

federal statisticians. This measurement includes in GNP only *productive* expenditures of governmental units; transfer expenditures are excluded (including interest on public debts). All productive expenditures are included. This amounts to assuming that all government services are either final product items or intermediate or input items in the production of private goods and services which are not reflected in prices. While, as we shall see in the appendix, this classification is somewhat arbitrary, for the purposes of rough comparison the possible refinements are not highly significant.

TOTAL GOVERNMENT EXPENDITURES

Having discussed the problems of finding appropriate measures, it is now time to plunge directly into the hard facts. For fiscal 1960, which began 1 July 1959, total government expenditure in the United States was estimated to be $146 billion. Of this total, $93 billion was the estimated expenditure of the federal government, and the remaining $53 billion was the estimated expenditure of state and local governmental units. This figure for total governmental expenditure may be compared with an estimated gross national product for fiscal 1960 of some $460 billion. More than one out of each four dollars earned in producing goods and services was channeled through the fiscal process for the fulfillment of some governmental purpose. This very brief presentation of the current factual picture is perhaps sufficient to indicate the tremendous importance of the governmental sector of the economy, even when measured only in the *direct* sense earlier discussed. But the magnitude of the public sector can be more fully appreciated when the growth of total governmental expenditure over the years is traced.

Unadjusted figures for total government expenditures are given in Table 4–1 and these are illustrated in Figures 4–1 and 4–2. Several points may be noted on the basis of these rough data. The first impression is one of the enormous rate of growth in total governmental expenditure over the century and a half covered. Although data for the nineteenth century are very spotty, even the roughest estimates provide sufficient evidence that the public sector of the American economy has been growing at an increasing rate almost from the beginning of our history. Roughly speaking, governmental expenditures increased four- or fivefold during the first half of the last century, from 1800 to 1850. During the Civil War, federal expenditures surged above the one billion mark for the first time

but remained there only one year. Over the entire fifty-year period, 1850-1900, total governmental spending increased somewhere between ten and twenty times over; from 1902 until 1960, the increase was almost ninety times.

TABLE 4-1

Total Government Expenditure, Federal Expenditure, State and Local Expenditure—Selected Years—1799-1960
(In current dollars)

Year	*Total, All Governments* (*In millions*)	*Federal* (*In millions*)	*State and Local* (*In millions*)
1799	$ 20-30[a] (est.)	$ 10[b]	nda[a]
1850	80-120 (est.)	40[b]	nda
1902	1,660[c]	572[c,d]	$ 1,088[c,d]
1913	3,215	970	2,245
1919	22,883 (est.)	18,448[c]	4,435 (est.)
1922	9,297	3,763	5,534
1927	11,220	3,533	7,687
1932	12,437	4,266	8,171
1934	12,807	5,941	6,866
1936	16,758	9,165	7,593
1938	17,675	8,449	9,226
1940	20,417	10,061	10,356
1942	45,576	35,549	10,027
1944	109,974	100,547	9,427
1946	79,707	66,534	13,173
1948	55,081	35,592	19,489
1950	70,334	44,800	25,534
1952	99,847	71,568	28,279
1954	111,332	77,692	33,640
1956	116,269	76,463	39,806
1957	126,392	82,631	43,761
1958	130,900 (est.)	84,900[e]	46,000 (e.t.)
1960	145,875 (est.)	92,875 (est.)	53,000 (e.t.)

[a]No data are available for state and local expenditure prior to 1900. The ranges of $20-30 million and $80-120 million for all governments in the years 1799 and 1850 are estimated on the basis of federal totals. From later data it does not seem likely that the federal government share even exceeded one half of total government expenditure during this early period, and it probably was closer to one third than to one half.

[b]Data for federal expenditure for 1799, 1850, and 1919 are taken from M. Slade Kendrick, *A Century and a Half of Federal Expenditures*, Occasional Paper No. 48 (National Bureau of Economic Research, 1955).

[c]Except where otherwise noted, data for total expenditure, federal expenditure, and for state and local expenditure from 1902 through 1957 are taken from *Governmental Finances in the United States, 1902 to 1957*, 1957 Census of Governments Advance Release No. 9, U.S. Department of Commerce, Bureau of the Census, 1959.

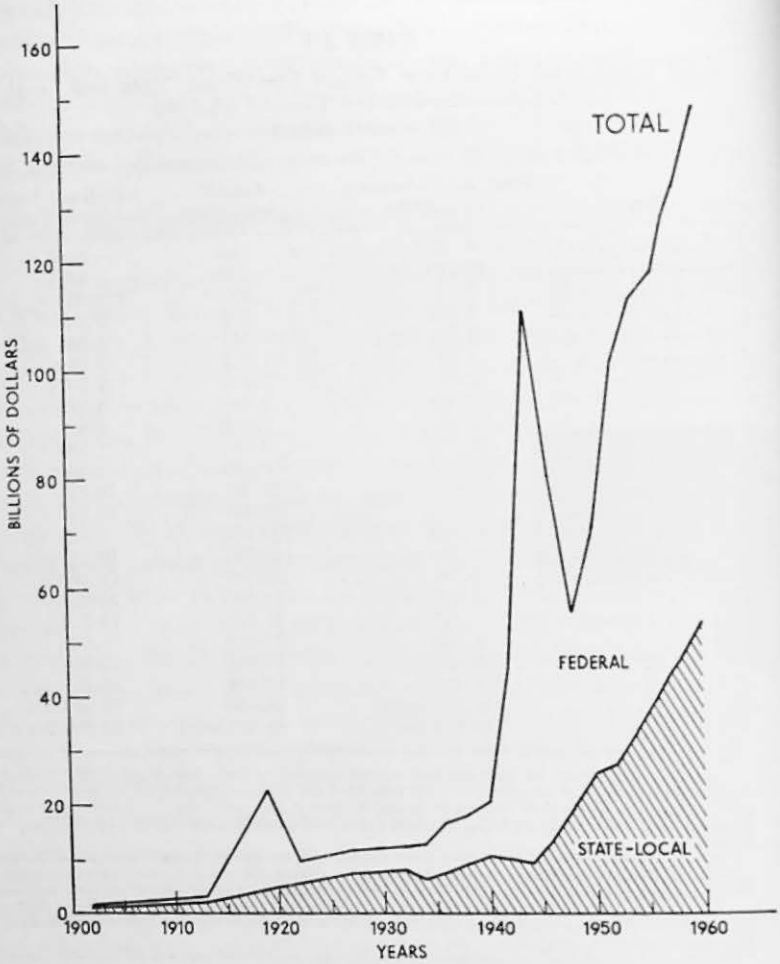
[d]State and local totals are adjusted downward by the amount of federal grants-in-aid since this appears in federal expenditure totals.

[e]Federal expenditure estimates from 1957 are taken from *Budget of the United States, 1958, 1959, 1960*.

The picture is substantially changed when we reduce our figures to per capita terms. General per capita expenditure of all governments increased from about $20 in 1902 to $650 in 1957, or some thirty-three times as compared with a seventy-five fold increase in unadjusted expenditure. Thus, we see that somewhat more than two

FIGURE 4-1

Total Government Expenditure, Federal Expenditure, State and Local Expenditure—1902-60



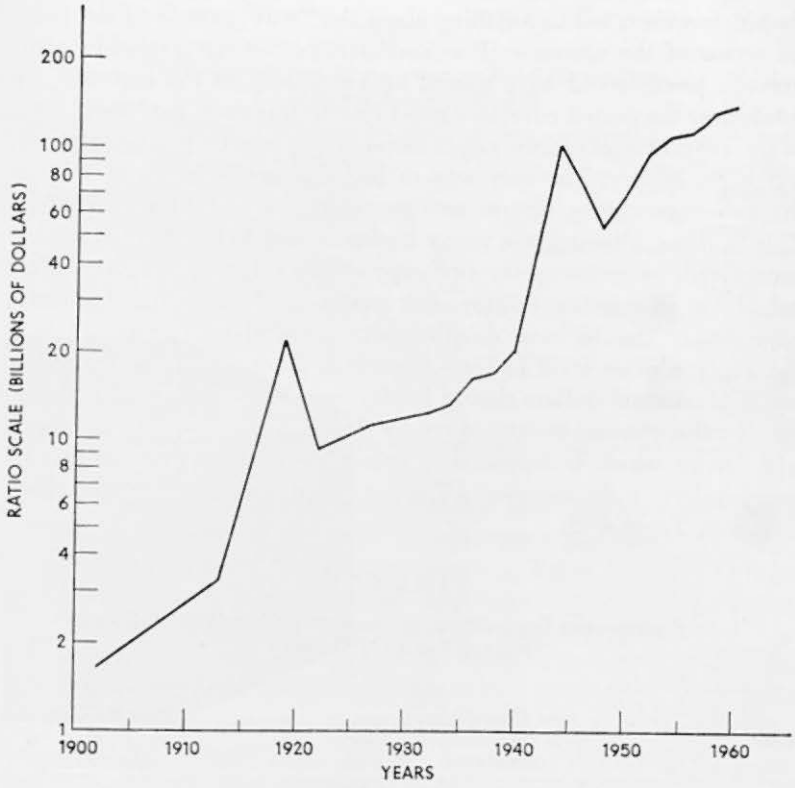
fifths of the increase in total government expenditure over the first half of this century can be attributed to population growth.

Another important relationship appears from a glance at Table 4–1. Except for war periods, and for a short time in the bottom of the Great Depression, state and local expenditure combined exceeded federal government expenditure up until World War II. Since World

War II, the federal expenditure total has been almost double that of the combined state-local total. Relatively speaking, the public sector has become concentrated in the central government only during the last two decades.

FIGURE 4-2

Total Government Expenditure, 1902-60—Ratio Scale



The state-local expenditure totals reveal a steady growth over the period covered. On the other hand, the federal totals seem to move by spurts. This is explained, of course, by the tremendous increase in federal government expenditure made necessary by war. One needs only to look at the isolated years 1919 and 1944 in relation to the preceding years to appreciate this fact. It is characteristic that the level of expenditure in postwar periods never falls to prewar amounts. Federal expenditure tends to grow by a stairlike progression, moving rapidly upward to meet wars or the threat of war,

falling back from the war peaks, but remaining on plateaus far above prewar plains.

Figure 4–1 provides a graphic picture of the growth of government expenditures, and indicates the divergence between the growth pattern of federal expenditure and state-local expenditure.

The unadjusted data in Table 4–1 and the accompanying figures do not, however, tell us anything about the "real" growth of the public sector of the economy. It is conceivable, but not probable, that average prices could have moved up as rapidly as the expenditure totals over the period covered since 1799. In this case, the "real" size of the governmental sector might be no larger now than it was during our early history. The only way to find this out is to try to reduce the raw expenditure figures to some comparable real magnitudes. This is done, although the many limitations of the method must be recognized, by reducing the raw expenditure totals to some measure calculated in constant dollars. For example, if the figure for total expenditure should have doubled between a given two years, but the average price level had also doubled, the expenditure figure in terms of constant dollars should be the same for the two years. Technically, this process is carried out by deflating the raw data by some price index which is supposed to reflect the average price of goods and services in the economy. The results of such a calculation are shown in Table 4–2.

TABLE 4-2

Total Government Expenditure in Constant Dollars (1926 Prices)—Selected Years (1799-1960)

Year	*Total Expenditure, All Governments (In millions)*	*Year*	*Total Expenditure, All Governments (In millions)*
1799	$ 23–35 (est.)	1940	$ 25,975
1850	141–211 (est.)	1942	46,129
1902	2,818	1944	105,744
1913	4,606	1946	65,813
1919	16,508	1948	33,362
1922	9,614	1950	43,550
1927	11,239	1952	58,144
1932	19,193	1954	64,463
1934	17,099	1956	65,800
1936	20,740	1958	71,452
1938	22,487	1960	79,089

Note: Figures are computed by deflating figures in column 1, Table 4-1, by the BLS Index of Wholesale Commodity Prices.

The figures in Table 4–2 show the growth of government expenditure independently of the increase in the average price level. Since average prices for the year 1926 are used as the basis for the calculation, we may say that the series shows how rapidly government expenditures should have grown if prices throughout the century and a half were fixed at a level equivalent to that of 1926.

TABLE 4-3

Total Government Expenditure as Per Cent of GNP—Selected Years (1902-60)

Year	*Total Expenditure, All Governments, as Percentage of GNP*	*Year*	*Total Expenditure, All Governments, as Percentage of GNP*
1902	8.3	1944	52.0
1913	8.8	1948	21.4
1919	20.6	1954	30.8
1927	12.6	1956	29.2
1932	21.3	1958	29.8
1938	20.7	1960	30.4 (est.)

Note: Percentages calculated on the basis of total expenditure data contained in column 1, Table 4-1. Kuznets' data for GNP used for years prior to 1929; Department of Commerce data for years 1929-60.

The figures in Table 4–2 indicate that there has been substantial growth in the amount of "real" government expenditure. The conclusions derived from the raw data shown in Table 4–1 are not seriously affected. Perhaps the most significant adjustment is in the data for the period since World War II. The total government expenditures shown for this period in Table 4–2 are considerably below those shown in Table 4–1. This is because a large proportion of the increase in actual government spending has been made necessary over this decade and a half by the rapid increase in the price level. It may also be noted that, despite the larger figures for unadjusted expenditures in recent years, "real" expenditure reached its maximum during World War II.

Information concerning the growth of government outlay provides no indication of the *relative* importance of government in the economy. The next step in adjusting the data is, therefore, to compare the growth of the public sector with the growth of the economy as a whole. We may do this by computing the total public expenditure for each year as a percentage of the gross national product. The results are shown in Table 4–3. Table 4–3 begins with 1902, the

first year for which reliable statistics for total government expenditures exist.

Table 4–3 indicates clearly that a considerable part of the expansion in the governmental sector of the economy is attributed to the over-all growth in the economy. Whereas unadjusted total government expenditure increased seventy times over during the period 1902-56, and even when adjusted for "real" growth government expenditure increased more than twentyfold, relative to gross national product government expenditure increased by a multiple of somewhere between three and four. But this remains an extremely important increase. The governmental "share" of total production in the 1950's and 1960's is more than three times as large as the governmental "share" in the first years of the century. This indicates a progressive collectivization of the economy over the half century.

Table 4–3 is useful also in comparing the relative efforts of the government in the two world wars. Whereas the public sector reached approximately one fifth of GNP in World War I, it reached more than one half in World War II. And during the Cold War period of the late 1940's and the 1950's, total public expenditure has comprised a larger percentage of GNP than did the peak efforts of World War I.

The sizable increase in the percentage shown between the years 1927 and 1932 is explained by the Great Depression. As Table 4–1 shows, total government expenditures increased over this period by less than $2 billion. But the percentage figures in Table 4–3 reveal that the relative importance of the public sector of the economy increased by 75 per cent. This is due largely to the serious reduction in GNP, which fell from more than $100 billion in 1929 to below $60 billion in 1932.

RESOURCES ABSORBED BY GOVERNMENT

As stated earlier, total government expenditure, as adjusted, does provide the best measure for the real cost of public services. More limited measures may be helpful if one seeks to ascertain the extent to which collective decisions directly control the allocation of economic resources. For this purpose, some figures for total resource absorption are needed. This is obtained by subtracting from total expenditure that portion which represents transfer payments. Insofar as the fiscal structure merely transfers purchasing power from one group of individual citizens to another group, the government does

not directly affect the organization of economic activity. Direct effects are exerted only when the government hires productive factors or purchases final goods and services. Government outlay for payrolls and purchases provides the appropriate measure here.

Table 4–4 shows how this outlay has grown over the half century covered. Only a few selected years are included, but these are sufficient to indicate the relative importance of direct resource absorption. At the start of the century, almost all government outlay was for payrolls and direct purchases. For the early years there is, therefore, little need to separate total resource absorption from total government expenditure. But transfer expenditures became an important

TABLE 4-4

Resource Absorption through Government—Selected Years (1903-56)

Year	*Government Outlay for Payrolls and Purchases, All Units (In billions)*	*As Percentage of Total Expenditure (Per cent)*
1903	$ 1.5	86
1929	8.5	82
1939	11.2	67
1949	46.7	74
1956	88.0	78

Note: Data for 1903, 1929, 1939 are taken directly from Solomon Fabricant, *The Trend of Government Activity in the United States since 1900* (National Bureau of Economic Research, 1952), Table 7, p. 27. Figures for 1949 are based on Fabricant's figures as adjusted to agree with data for total expenditures as shown in Table 1. Data for 1956 estimated directly from expenditure breakdown shown in *Economic Report of the President*, January 1958, p. 176.

part of total government outlay, especially during the Great Depression. This is indicated by the figure for 1939; government outlay for payrolls and purchases amounted to only $11.2 billion out of a total expenditure of $16.8 billion. Transfer expenditures (including interest) accounted for one third of total government outlay. In the years since World War II, transfer expenditures have remained important, but relatively speaking, resource-using expenditures have increased, although not to the extent of the ratio prevailing prior to the Great Depression. If the present international tensions were to be lessened, allowing a reduction in defense outlay, almost all of which is resource using, the proportion of transfer expenditures in the total might be expected to increase.

GOVERNMENT EMPLOYMENT

One of the most useful measures of the actual scope of governmental activity lies in government employment. Direct government purchase of goods and services from the private economy does, of course, alter the pattern of resource usage. But under this arrangement the actual organization of production remains in the hands of private firms. Only when the government directly hires productive services from resource owners does the organization of production shift from the private to the public economy. Government employs all of the productive services, but we may get an idea of the growth of its over-all employment by concentrating on the employment of personnel alone. In 1900 one out of *twenty* employed workers was employed by some governmental unit in the United States. By 1950, this had increased to one out of every *eight*, and this ratio seems to have remained reasonably stable during the decade of the 1950's.[1] Over the half century, 1900-1950, government employment increased, on the average, at an annual rate of 3.8 per cent. Government purchases, by comparison, increased by an average of 5.6 per cent per year. Thus, the relative importance of direct government employment within the public sector of the economy has decreased. This trend seems certain to continue in the forthcoming half century. As both military and civilian services are automatized, the rate of increase in government employment should not be so great as the rate of increase in government purchases.

CONCLUSIONS

What may we conclude from this brief survey of the growth of the public sector of the American economy?

1. The governmental sector has experienced phenomenal growth, whether this is measured on the basis of raw data or measured in "real" terms. In dollar terms, government at all levels now spends almost ninety times as much as at the start of the twentieth century. On a per capita basis, government spending has increased by a multiple of thirty-three over the sixty-year period. In dollars of constant purchasing power, governments at all levels spend close to thirty times as much as at the turn of the century.

2. The governmental sector of the economy has also experienced significant increases relative to the growth of the over-all economy. From less than 10 per cent of GNP at the beginning of this

[1]Ratios taken from Fabricant, p. 14; see footnote to Table 4–4.

century, government expenditure has grown to a position where it is now between 25 and 33 per cent of the GNP. The economy has undergone considerable collectivization over the half century since the start of World War I.

3. Both the federal government sector and the state-local sector have increased steadily, but the largest growth has been experienced in the federal government sector. Federal expenditures now account for almost two thirds of the total governmental spending in the United States. Prior to World War II, federal spending did not normally exceed state-local spending, and at the turn of the century, federal spending was only one third of total spending.

4. Direct resource absorption through governmental units has increased along with total government expenditures, but at a slightly slower rate. Transfer expenditures have become more important, especially so during the depression of the 1930's.

5. Government employment has increased rapidly, but not so rapidly as government purchases. Government now employs one out of each eight workers in the United States.

SUPPLEMENTARY READING

Solomon Fabricant, *The Trend of Government Activity in the United States since 1900* (National Bureau of Economic Research, 1952), and M. Slade Kendrick, *A Century and a Half of Federal Expenditures*, Occasional Paper No. 48 (National Bureau of Economic Research, 1955), may be consulted for more complete discussion of the growth of public expenditure in the United States. For an interesting and careful study which provides comparable data for Great Britain, see Alan T. Peacock and Jack Wiseman, *The Growth of Public Expenditure in the United Kingdom* (National Bureau of Economic Research), to be published.

Chapter 5 REASONS FOR GROWTH OF THE GOVERNMENTAL SECTOR

We have seen how rapidly the public or governmental sector of the American economy has grown, and we have noted the particular acceleration in this growth after World War II. A more complete picture of this growth may be presented by a functional classification of governmental expenditure at all levels. Detailed discussion of the governmental budgets, by functions, will be reserved for later chapters, but some idea of the growth of the public sector in terms of broad functional classifications is helpful at this point. In this way, some of the reasons behind the growth of the public sector may be provided.

WAR AND WAR-RELATED EXPENDITURE

The single best explanation for the tremendous growth in the public sector of the economy, and also for the increased concentration of expenditure in the federal government, is provided by the predominant importance of expenditures, direct or indirect, made necessary by wars or threats of wars. Federal expenditures have moved upward in leaps, with the particular jumps occurring during war periods. Prior to the Civil War, federal government expenditure did not exceed $75 million annually. But in 1865, federal expenditure reached a high of $1,298 million. In the period following the war, federal expenditure never fell lower than $200 million, and rarely below $250 million.[1] This common failure of federal expenditures after wars to fall to prewar levels is explained, in large part, by war-related expenditures. The national debt is expanded during wars, necessitating a higher annual interest charge in postwar

[1]Data taken from Kendrick, *op. cit.*, Table B-1, pp. 74–77.

years. And veterans' benefits also loom as added expenditures in postwar periods.

Only in one year prior to World War I (except for the Civil War years) was total federal expenditure above $750 million. In 1919, a high of almost $18.5 billion was reached, and annual federal expenditure in the 1920's reached a low of $2.4 billion in 1924. Before 1940, federal government expenditure, even in the Great Depression, did not exceed $10 billion in any nonwar years. But in 1944 and 1945, more than $100 billion was spent. In the postwar period, federal expenditure dropped to $36 billion in 1947 and 1948, but since that time, owing to the Korean War and the subsequent Cold War, annual totals have moved upward to the current levels of more than $90 billion.

Table 5–1 presents a breakdown between war-related federal expenditures and other federal expenditures for selected years. Total federal spending for national defense and international relations, for veterans' benefits, and for interest on the national debt has been included in war-related expenditures. The inclusion of the last item, interest on the public debt, is not wholly correct. Although the largest share of the national debt was incurred during war periods, notably World War II, there was a significant increase during the Great Depression. This correction would, however, involve a relatively slight

TABLE 5-1

Total Federal Expenditure, War-Related Expenditure, Civil Expenditure—Selected Years (1799-1960)

Year	*Total Federal Expenditure (In millions)*	*National Defense, Veterans, Interest (In millions)*	*Civil— Column 1 minus Column 2 (In millions)*
1799	$ 10	$ 9*	$ 1
1850	40	23*	17
1902	572	335†	237
1913	970	450	520
1927	3,533	1,959	1,574
1938	8,449	1,900	6,549
1944	100,547	87,807	12,740
1948	35,592	23,154	12,438
1954	77,692	56,545	21,147
1958	84,900	57,772‡	27,128
1960	92,875 (est.)	61,118 (est.)	31,757 (est.)

*Data for column 2 for 1799 and 1850 taken directly from Kendrick, *op. cit.*, pp. 74, 75.

†Data for column 2 for years 1902 through 1954 computed from basic data contained in *Governmental Finances in the United States, 1902-1957, op. cit.*

‡Data for column 2 for years 1958 and 1960 computed from *Budget of the United States Government, 1958, 1960.*

change in the over-all totals and it has been neglected in the preparation of Table 5–1.

By a summary comparison of columns 2 and 3, the growth in federal government expenditure may be seen to have occurred primarily in the war or defense sector. This sector has grown much more rapidly than have the remaining items of federal expenditure.

FEDERAL "CIVIL" EXPENDITURES

Federal expenditures for nonwar purposes have grown less rapidly, but still significantly, over the period covered. Of particular interest is the recent pattern of this growth. Note that the figures in column 3 of Table 5–1 almost double between the years 1938 and 1944, remain roughly on a plateau between 1944 and 1948, and again experience a doubling between 1948 and 1958. The sudden jump from 1948 to 1958 is difficult to explain without careful study. Why did federal "civil" expenditures increase by almost $15 billion over this short span of years?

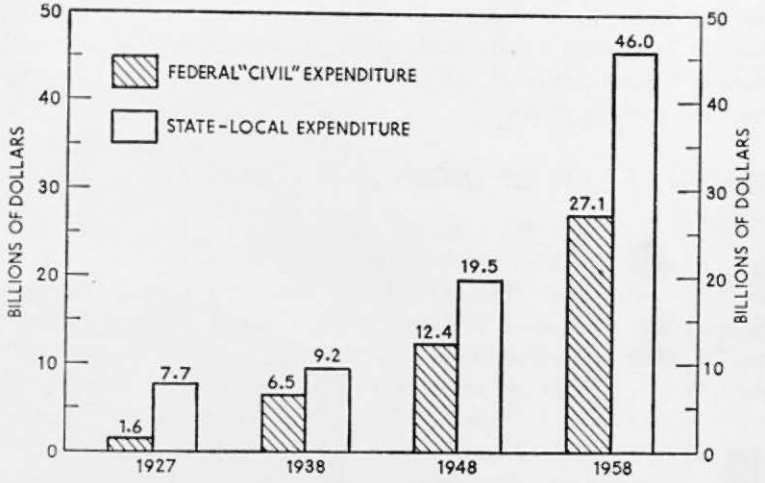
One of the most important reasons is the growth in trust fund expenditures. These alone increased by about $6 billion over the four years, 1954-58. The two most important items are outpayments under the Social Security program and federal grants to the states for highway construction. Both of these important items may be expected to continue their increase, making federal expenditures in the nondefense sector become increasingly important relatively, even if no new federal functions are added. The second major reason seems to be the gradual growth in federal activity in almost all established lines. One major item of significance has been the mounting expenditure for the agricultural subsidy program. This alone required a $2.5 billion increase between 1954 and 1958. Increased commitments for international aid programs account for much of the increase, although these can, in one sense, also be considered as war and defense related. Each of these items will be discussed in more detail when we consider the federal budget in later chapters.

It seems useful to compare the growth of the federal "civil" sector with the growth of state-local expenditure, which is, of course, exclusively "civil" in the sense here used. Note that federal nonwar expenditures have never been as large as total state-local expenditure (column 3, Table 4–1) and in most of the years covered federal expenditures have been less than one half of the state-local amount. Therefore, in abstraction from the performance of the collective func-

tion of providing security against external enemies, the role of the federal government has been less important than that of the state-local governmental sector. This fact is often overlooked in popular discussion. Figure 5–1 compares federal "civil" expenditures with state-local expenditures for a few selected years.

FIGURE 5-1

Federal "Civil" Expenditure and State-Local Expenditure—Selected Years (1927-58)



Even here, in the exclusively civilian sector of the economy, the relative importance of the federal government seems to be increasing. In 1927, federal "civil" expenditures were only one fifth as large as state-local expenditures; in 1958, federal expenditures were considerably more than one half as large. Over the next half century both federal "civil" expenditures and state-local expenditures will, of course, increase. But prediction on the basis of growth trends indicates that the federal sector will expand relatively to the state-local sector.

STATE-LOCAL EXPENDITURES

Expenditures made by state and local units of government have shown a steady rise. This rise, even at a somewhat accelerated rate, seems likely to continue. The population upsurge during and after World War II has placed increasing demands on states and localities,

especially for the financing of public education. It has been predicted by competent students of state-local finances that total spending by these units will reach $60 billion before 1965. The state-local demands on resources, taking up somewhat more than 10 per cent of GNP, cannot be ignored, even if these tend to be overwhelmed in significance by federal government spending in this so-called "space age" when military outlay may continue to accelerate for several years. By and large, states and local units spend for the same things as before—schools, highways, health services, public welfare. But the demands placed upon these units by the increasing population and the increasing urbanization of the country seem likely to cause each of these traditional functions to be greatly expanded in scope over the ensuing years.

WAGNER'S LAW OF INCREASING PUBLIC ACTIVITY

We have seen that a partial explanation for the growth of the public sector in the United States lies in the pattern of war and defense outlay over time. For the nondefense sectors, both in the federal and state-local budgets, many institutional and historical reasons may be adduced to explain why the economy has become increasingly collectivized over the years. But a more fundamental examination may be helpful; institutions are themselves patterns formed by individual decisions, and there are no immutable historical laws. Even war expenditures cannot properly be treated as wholly independent of individual choices.

Adolf Wagner, a noted German fiscal theorist of the nineteenth century, propounded an empirical law to the effect that governments inevitably grow larger, that the collective sector of the economy has an inherent tendency to increase in size and importance. Are there any logical reasons why this law, which does seem to have been an accurate prediction of the facts, must hold true? Are there certain inherent tendencies for governments to grow larger and larger over time, not only absolutely, but relatively to the size of the economy?

Such questions as these deserve consideration although they cannot be answered fully. The first step might be some examination of the *income elasticity* of government services. As real income increases, the demand for all goods and services increases. This itself is sufficient to explain why people demand more public services in absolute terms. But this does not explain why government services have become more and more important relative to privately marketed

goods and services. This would be explained only if the income elasticity for government services should be greater than the income elasticity for privately marketed goods and services.

Income elasticity is a measure of the responsiveness in demand to a change in real income. If real income goes up, an income elasticity of one would indicate that, percentagewise, the demand for a particular good goes up equally. A 1 per cent increase in real income would generate a 1 per cent increase in demand for the good in question. If we include savings as a means of using income, we can see that the income elasticity for all dispositions of income together must be unity or one. Therefore, if the governmental sector expands, relatively, as income expands, the income elasticity for governmental services must exceed unity. A 1 per cent increase in real income must generate more than a 1 per cent increase in the demand for public services. There does seem to be reason to expect rather high income elasticities for governmental services. Few public services, beyond the barest protective legal structure, seem to be as essential as basic food and clothing. But as income rises beyond those levels where basic needs are met, governmental services become more important. Educational services, health facilities, highways, defense against external aggression, and other services begin to loom large in the want patterns of private individuals. But this effect too may extend only over a limited range. At certain levels of real income, elasticities of demand for government services may be quite high. But as real income increases still further, basic needs for collectively provided services may also be met, and public clamor for additional public activity may subside. Few generalizations may be advanced concerning the whole question of income elasticity for governmental services without more detailed empirical investigation and inquiry.

At best, approaching the question in terms of income elasticity assumes that individuals may, in fact, choose public services in a manner similar to the way in which privately marketed goods are chosen. A more fruitful approach may be that which contrasts the way collective choices are made with choice making in the private sector. By their very nature, most public services are indivisible. They cannot, therefore, be "priced" directly when provided to individuals. Payments for public services must be divorced, wholly or partially, from the receipt of the benefits of such services. In the private economy, on the other hand, the receipt of a particular good or service is tied directly to the payment of a price as an integral part of the market process. The individual is fully conscious of the

cost. The absence of this two-sided relationship in the fiscal process may tend to support the Wagner hypothesis. It will do so if public or collective "needs" are chosen independently of the costs, and spendings decisions are made prior to taxation decisions. But the reverse might also be true in certain cases. Primary attention to cost, as reflected in tax burdens, may cause genuine collective "needs" to be overlooked. The whole problem of collective choice making and its effects upon the decisions made deserves greater emphasis, and we shall return to this in a later chapter.

In a more fundamental sense, Wagner's Law, as such, cannot be said to have any logical basis. The decisions of a people concerning the share of total economic resources to be devoted to public rather than private uses cannot really be predicted in advance. Obviously, the choices will depend, in part, upon the generally prevailing politico-economic philosophy. The role of government chosen by democratic society will be determined by the conception of the functions of government adopted by individuals of the group. During the late eighteenth and early nineteenth centuries, the regulatory functions of government were gradually reduced. The last century has seen the pendulum swing back toward more government regulation of economic life.

Technological factors may, of course, affect the decision to some degree. New developments may create new indivisibilities or dispel old ones. For example, the classical lighthouse may be rendered obsolete by the invention of radar. Individual ships may be equipped with radar; no need for collective provision of a lighthouse arises. Or, contrariwise, the advent of jet aircraft may make whole new patterns of air traffic control essential. Institutional factors may also be important. The increasing population concentration in urban areas may make collective provision of park and playground facilities much more valuable. On the other hand, the same development should reduce the proportionate cost of providing police and fire protection.

The appropriate dividing line between those functions which can best be performed by governmental units and those which can best be left to the private economy is seldom clear, and even if it were, it would seldom be respected. Public attitudes, always themselves subject to change, will, at any time, determine the relative importance of the governmental and the private sectors of the national economy.

THE DISPLACEMENT AND SCALE EFFECTS

In their recent study of the growth of public expenditure in Great Britain, Professors Peacock and Wiseman have developed interesting hypotheses to explain the pattern of growth in public spending. In particular, they suggest that the failure of ordinary spending to return to prewar plateaus in postwar periods and after other major disturbances may be explained by a *displacement* effect. In normal times, the possible extension of the public sector of the economy is broadly limited by what the general public considers to be a reasonable or tolerable level of taxation. A major disturbance such as a war changes this tolerance limit, and, invariably, the economy is found to be capable of supporting heavier taxes than had previously been anticipated. In a world dominated by a politico-economic philosophy of expansion in the public services, governments will tend to utilize postwar or postdisturbance periods to expand public services rapidly. And this expansion will be general; it will not be limited to the war-related or war-caused public outlays. This displacement effect will be supported by several other changes. War periods will create new and emergency demands on governments, even in the civilian sector. Governments will gain experience with certain administrative and regulatory activity. And, finally, people will come to expect a greater degree of governmental intervention. This displacement hypothesis for explaining the expansion of public services generally is joined by a *scale* hypothesis which suggests that the same effects will tend to cause a great concentration of financial responsibility in the central government.

These hypotheses seem suggestive, and they offer plausible explanations for observed facts about public spending. They suggest that, in the twentieth century, major disturbances in the economy may be expected to increase permanently the relative importance of the public sector. On the other hand, they suggest that, in the absence of major disturbances, the public sector may not increase substantially in relative importance.

SUPPLEMENTARY READING

The student may consult the work of Peacock and Wiseman directly for a more extended discussion of the displacement and scale hypotheses. See the reference at the end of Chapter 4.

Appendix to Part I

THE GOVERNMENT SECTOR IN THE NATIONAL INCOME ACCOUNTS

The difficulty of estimating the value of public services has been mentioned in the preceding chapters. In order to arrive at reasonably accurate measures for gross national product or any of the other derivative accounts, some attempt must be made to include the governmental sector; so large a portion of the economy can scarcely be neglected. The procedure which has been followed is that of including public services at cost values. However, transfer expenditures have been excluded from the estimates for gross national product on the grounds that these do not represent payments for any real goods and services. Interest on government debt has been treated as a transfer payment and also excluded. Even with all transfer items excluded, the governmental share of GNP amounts to an annual total of more than $60 billion, or almost 15 per cent of the entire value. The questions as to the treatment of the governmental items are quantitatively significant.

Two problems arise which seem worthy of discussion in this brief appendix. First of all, is the exclusion of transfer expenditures correct? Let us leave out of account for the moment the question about interest on the government debt. We may illustrate this problem by reference to our veterans' hospital example used earlier. If the government decides to pay direct hospitalization subsidies to qualified veterans instead of providing hospital services directly, the veterans would then purchase hospital services from private hospitals. These services would show up in the private sector estimates for GNP. Therefore, if the value of the transfer payment to the veterans were also to be included, double counting would be present. On the other hand, if the government provides hospital services directly to the veterans, the value of these services will not show up in the estimates for

the private sector. Therefore, it is necessary that some measure for such publicly provided services be included. The inclusion of productive expenditures and the exclusion of transfer expenditures seems correct.

Similar conclusions follow when we consider the interest on the public debt. This payment represents a contractual return to the owners of government securities for income which they have transferred to government in past periods. In no way does it represent payment for current goods and services. If, when the funds were borrowed, government has invested for long-term projects, there should be some governmental asset to offset the debt obligation. But there is no necessity that there be such an asset, since the borrowing may have been necessary to cover current obligations, such as war expenditure. As such, the borrowing operation may have been necessary and desirable, but the legitimacy of the borrowing transaction does not justify inclusion of the interest item in GNP. This conclusion applies to state and local as well as to federal debt. On the other hand, if government-owned assets do exist which yield an income return in the form of public services, estimates for national production should include some adjustment to reflect the value of these services. This item has not been properly included in estimating GNP, and some modification seems required here. But the sometimes proposed inclusion of the interest item seems a poor excuse for failing to measure the return on government assets directly.

The second major problem concerns the treatment of public services which are in the nature of intermediate goods or productive factors. In the private economy, care is taken to include only final products and services in estimating GNP. To include both the value of the wheat and the value of the flour milled from the wheat is the textbook example of double counting. The inclusion of the cost values of all public goods and services amounts to assuming that all of these are equivalent in effect to final products. But this clearly seems to be at odds with reality. To a large extent, public services serve as inputs to the production of private goods and services. The value of the ship's cargo may, under certain conditions, include an increment of value properly attributable to the lighthouse. The productivity of the trucking firm clearly depends on the public investment in highways. Insofar as public services do, in fact, serve as productive service inputs to the production of privately marketed goods and services, and insofar as the value of these services comes to be reflected in final product prices, double counting occurs in the estimates for

GNP, and current measurement practices tend to overstate the size of GNP.

A relatively small proportion of all public services seems to benefit directly the final consumer. Therefore, if GNP is considered to be an appropriate measure for potential consumption, the exclusion of any valuation for public services has much to recommend it. More generally, however, GNP is taken to measure the value of production in the economy. Here the inclusion of at least a portion of the public services seems necessary. Although many public services do not appear to be final consumption items, important services, such as national defense, do not demonstrably serve as productive inputs either. Here it seems proper to follow current practice and include the cost value of such services in GNP. Improvements in national income accounting can be achieved by some distinction between these noninput public services and those which are more nearly like productive factors. The latter category should include at least a portion of the expenditure on education, highways, health facilities, and other similar services.

Other equally difficult problems arise in the treatment of taxes in the national income accounts. These problems do not arise directly in estimating GNP but rather in moving from GNP to some of the derivative accounts. We shall leave discussion of these issues aside at this point. Perhaps the summary discussion here is sufficient to indicate some of the problems which do arise when actual attempts are made to add together the total value of goods and services produced both in the public and the private sector of the national economy.

Part II THE BUDGET AND THE NATIONAL ECONOMY

Part II discusses the fiscal structure of the government as it affects, and is affected by, the level of economic activity. Fiscal policy in its broadly used sense will be the central topic of this part of the book. Fiscal policy is here defined as deliberate utilization of the government's budget as a means of accomplishing stabilization objectives.

In some curricula, fiscal policy is specifically included in courses other than those in public finance. If this is the case, instructors may find it advisable to skip this part of the book or to assign it only as background reading. Some instructors may also find it desirable to include this fiscal policy material at a later stage. The discussion of Part III follows directly from that of Part I or Part II. This organization of the material allows the instructor to use his own discretion concerning the appropriate place to introduce fiscal policy.

Chapter 6 NATIONAL INCOME DETERMINATION IN THE NO-GOVERNMENT ECONOMY

There are several ways to study the "economics" of public finance; the choice among these depends on the problem faced. For some purposes, we may examine the working of the many separate submarkets in the economy and try to predict the effects of the tax and expenditure structure upon the behavior of individuals and firms in those markets. To some extent, this approach will be adopted in later parts of this book. In Part II, however, another approach will be taken. Here the economy will be examined in total or aggregative terms, and the influence of governmental fiscal activity on the over-all results will be assessed. The impact of the fiscal structure on the aggregative or macroeconomic variables will be determined. By the latter is meant gross national product, national income, employment, the price level, and other similar or derived terms.

This "fiscal policy" approach is adopted in Part II to concentrate attention on the problem of over-all economic stability and the government's role in achieving it. The purely "financial" aspects of the public finances will be temporarily neglected. That is to say, the procurement and the utilization of resources to fulfill collective needs will be secondary to the discussion. We shall be concerned with governmental provision of collective needs only insofar as "economic stability" is defined as one such need.

There are two parts to the task set before us. First, the effects of the fiscal structure on the macroeconomic variables must be examined independently of motivation or intention. Assuming that decisions concerning the level of taxes and public expenditures are made without regard for the effects on the total economy, how do these decisions exert an influence? What are the effects of a budget

of the size now in being? How would a larger or a smaller total budget change things? What are the predicted effects of deficits or surpluses? All of these questions, and many more, arise in an attempt to discover the way in which a fiscal system, a public economy, is incorporated into the organization of a market-oriented economy.

The second stage of our inquiry will utilize the results of the first stage analysis in trying to evaluate norms for fiscal action. If it is recognized that tax and public expenditure decisions do exert important effects on income, employment, and prices, these effects should be taken into account. Criteria for desirable and undesirable policy must be discussed. Fiscal policy becomes a deliberately chosen means of achieving economic stabilization. From this second stage of the study, we secure the name "fiscal policy," which has come to mean any deliberate utilization of the tax-expenditure structure with a view toward affecting the value of the macroeconomic variables. In this sense, fiscal policy is a relatively recent innovation. Only since the Great Depression of the 1930's, and especially since the publication of Lord Keynes' *General Theory of Employment, Interest, and Money*, has deliberate manipulation of the governmental budget for stabilization purposes come to be widely accepted.

THE PRINCIPLES OF INCOME DETERMINATION—THE SIMPLE MODEL[1]

It will be useful again to assume, as we did in Chapter 1, that the public sector does not exist. With this simplification, let us proceed to analyze the process of national income determination.

National Income Defined

We must first define *national income*. We are interested in determining the size of the flow of real goods and services generated in the circular flow process illustrated in Figure 1–1 (Chapter 1). But, as mentioned earlier, different goods and services can be added together only in terms of price or money values. If we add up all the money values for final products arising during a given time period, we secure a measure for *gross national product*. It is quite clear, however, that some part of the annual production of the economy is not "income"; some part of total production is necessary in order to

[1]The student will recognize that the discussion which follows is intended as a general review of the elementary principles of income determination. Students desiring a more comprehensive discussion are referred to the appropriate sections of any standard modern textbook in elementary economics.

replace the capital which is worn out or used up during the production period. This replacement production is not "income" in any acceptable usage of the term. Therefore, in order to secure a value for *national income* from *gross national product*, some estimate must be made for this capital consumption item. If we allow a public sector in the model, prices of final products also may reflect the presence of indirect taxes, and, insofar as they do, product values will not constitute incomes. A second deduction is, therefore, made in this case for indirect business taxes. *National income* is then defined as *gross national product* minus capital consumption allowances and indirect business taxes.

National income is always measured in money units—dollars for the United States. In order to secure better comparability among separate time periods, the raw monetary figures may be deflated by some index of prices. This reduces separate national income data to a base-year set of prices, or as sometimes called, to constant dollars. After this adjustment is made, the resulting total is sometimes called *real national income* as distinguished from *national money income*. This distinction is basic for some purposes in national income analysis, but it need not concern us here.

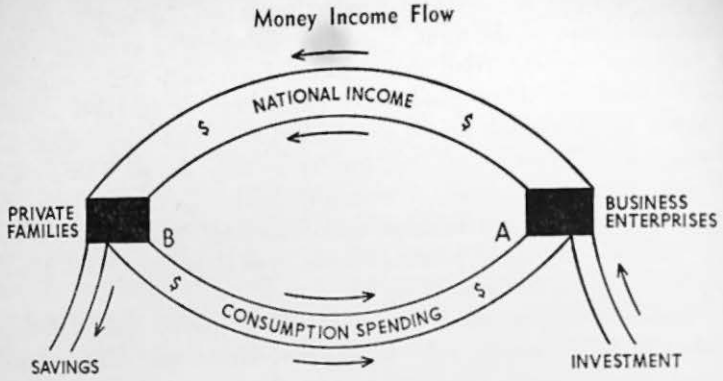
Two Measures for National Income

There are two ways to measure national income. This may be illustrated in Figure 6–1, which reproduces Figure 1–1 (Chapter 1) in part. Recall that Figure 1–1 illustrated the two-way flow of real goods and services and money in the market economy. Figure 6–1 includes only the circular money flow. The broad band in the upper half of the figure indicates national income, and the fact that the flow is circular makes possible several measuring points. At point A, the total flow is measured in terms of final products. As business firms produce goods and services, these must be sold in one of two ways. Sales must be made either to private families as consumption items or to business firms as net investment items. (Recall that we must correct initially for capital consumption.) *Net investment* is defined as the purchase of new capital goods. If we label national income as Y, net investment as I, and consumption expenditure as C, we may derive the following equation:

$$(1) \quad Y = C + I$$

National income is defined as equal to consumption expenditure plus net investment expenditure.

FIGURE 6-1



We get different results when we measure the flow of income at another point of the circle, point *B* in Figure 6–1. Here income is measured as it has come into the hands of private families as wages, salaries, dividends, interest, rentals, royalties, capital gains, etc. If we examine the behavior of each income receiver, we know that in the no-government, closed economy there are only two ways for him to dispose of income. He may spend it for consumption goods and services or he may save it. Adding up in this way we secure another equation:

$$(2)\quad Y = C + S$$

National income is defined as equal to consumption expenditure plus net saving.

The Equality of Saving and Investment

From the information contained in Equations (1) and (2), we can see that if the same income, Y, is measured in each, saving, S, and investment, I, must be equal. Or,

$$(3)\quad S = I$$

This equality between saving and investment is central to the theory of income determination. Why should saving and investment be equal? Saving results from behavior of both private families and business firms (we have neglected the latter in our simple model). Investment is, for the most part, the result of decisions made by business firms. What coordinating mechanism keeps these two magnitudes in equality at all times?

The answer is that the terms are defined in such a way that the equality always holds. If a business firm does not sell all that it hopes to market in a particular period, it will find inventories accumulating. In one sense, therefore, this firm can be said to be "purchasing from itself" capital goods in the form of added inventories. If net investment is defined to include such unintended accumulations of inventories, the definitional identity between saving and investment can be maintained. Neither saving nor investment need be *intended* or *planned* in the way in which the terms are defined. This being true, the identity between saving and investment must be correct by definition since all income paid out to owners of productive factors must be incorporated in the value of the goods and services produced.

Intended Saving and Intended Investment

The definitional equality between realized saving and realized investment, even if unintended, provides the key to the determination of income. If intended saving is not equal to intended investment, the system is not in equilibrium and corrective forces are set in motion. This process may best be shown by examples.

Suppose that business spending for plant and equipment falls off, as it did in mid-1957. This means a drop in intended investment. As a result, firms producing such capital goods, not having predicted the cutback in orders, find inventories accumulating. Initially, these firms find themselves investing *unintentionally* to offset the reduced intended investment of the other firms. But the capital-goods-producing firms will not continue to produce while inventories are piling up. As new plans are made for subsequent production periods, the affected firms will reduce production and employment. This action will directly reduce the flow of income. In this way, an initial reduction in intended investment generates a reduction in national income. This reduction will continue until a new, and lower, level of income again produces a new equilibrium where intended saving and intended investment are equal.

One additional example illustrates the reverse process. Suppose that, precisely opposite to the foregoing example, business spending for new plants increases suddenly. Firms producing capital goods will find themselves unable to meet new orders rapidly. Realized investment will fall below that which is intended. Capital goods industries will try to expand production and employment. Money national income will increase. Whether or not real national income

will increase or remain stationary depends on the characteristics of the original position. If some unemployment exists before the change takes place, real national income will likely increase. If, on the other hand, substantially full employment should be present initially, the increase in the demand for capital goods will increase national money income largely by pushing the level of prices upward. In either case, money national income will tend to increase until a new and higher level equilibrium income is attained where intended saving and intended investment are equated.

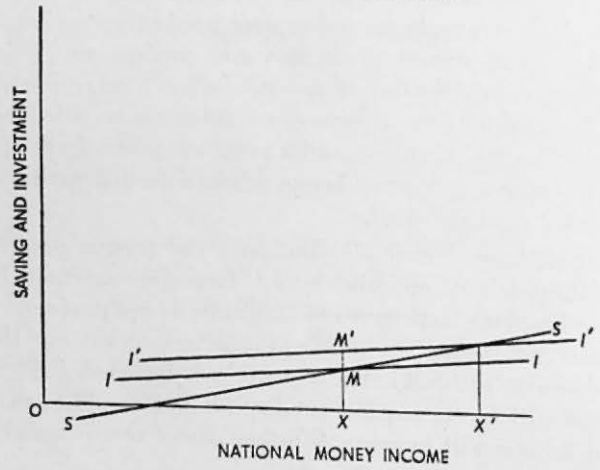
Graphic Analysis

The simple model of national income determination introduced here may be illustrated geometrically in Figure 6–2. National money income is measured along the horizontal axis; saving and investment are measured along the vertical axis. The line *SS* defines the saving fuction. It relates saving to national income at all levels. Note that this function slopes upward to the right and that it cuts the horizontal axis from below. The line *II* defines the investment function which relates net investment to national income at all levels. This line also slopes upward to the right, but not so greatly as the saving function.

The equilibrium level of national income is *OX*. This is the only position at which intended saving is equal to intended investment.

FIGURE 6-2

National Income Determination



A shift in intended saving or intended investment, which would be represented by a shift upward or downward in the relevant functions, will modify the equilibrium level of income.

The Investment Multiplier

On the basis of the analysis presented, any shift in spending or saving plans can be seen to shift the equilibrium level of national income. The multiplier concept has been developed in an attempt to relate the size of the shift in income to the initial change in spending. The multiplier is defined as the ratio between the induced change in income and the initial change in spending. This concept has been used directly to relate income changes to changes in investment spending; hence the term "investment multiplier." But it should be emphasized that the multiplier works similarly for any autonomous change in spending.

Again we shall find simple examples useful. Let us suppose that investment spending increases by $1 billion. How much will this cause income to increase? If we assume that no other plans in the economy change in either an offsetting or a complementing manner, the addition of the $1 billion will increase the income flow directly by that amount during the first income generation period. The firms expanding their capital goods purchases will pay out the additional funds to capital goods producers, who will, in turn, increase outpayments of salaries, wages, dividends, and other income shares. Private families, as they receive this added money income, must decide what proportion of this increment to return to the income stream in terms of consumption expenditure. If some predictable relationship exists between the receipt of additional income and the additional amount of private consumption expenditure, this proportion may be used in deriving the multiplier. Let us say that, on the average, private families spend for consumption 90 cents out of each additional income dollar they receive. Technically, this defines the "marginal propensity to consume" as .9. Or, to state the same thing conversely, we may say that private families save 10 cents out of each additional income dollar. The "marginal propensity to save" is .1. If this relationship holds, on the average, we can predict that $900 million of the added $1 billion will return directly to the spending stream. Therefore, if we look at the effects of the additional spending in the second period of income generation, we see that nine tenths of the original amount remains. The third period

will see an additional $90 million drained out in saving and $810 million returned to the spending stream. Thus, we can secure a total value for the additional income generated by the initial added investment spending in the following progression.

Income Period	*Increment to Income (In millions)*
1	$ 1,000
2	900
3	810
4	729
5	656
6	590
7	530
8	477
9	429
10	...
..	...
.. ..	...
n	...
Total	$10,000

A total of $10 billion in additional income will be generated by the increment of $1 billion to spending. The multiplier is 10.

A more simple means of determining the value of the multiplier is provided by looking directly at the marginal propensity to save. If we recall that for income to be in equilibrium realized saving must equal realized investment, we know that income must rise sufficiently to generate an amount of new saving equal to the amount of new investment. Thus, if the marginal propensity to save is one tenth, the multiplier must be 10.

In this illustration we have assumed that the increment to investment is a once-and-for-all addition to the spending stream. The additional income generated is spread out over a whole succession of income periods, becoming less and less important as the drainage out of the spending stream through saving becomes larger and larger. A more useful idea of the multiplier may be gained by assuming that the increment to investment spending is not a once-and-for-all addition but that the *rate* of investment spending increases permanently. That is to say, assume that for each period in the future investment spending will take place at a level $1 billion higher than previously. The effects of the first increment will be as outlined. But at the beginning of the second period, a second increment must be taken into account. The effects of this second increment will be equivalent to the first except that there will be a one-period lag—and

so on with the third and fourth and subsequent period increments to investment spending. In this model, total income will continue to go up period by period until a final equilibrium is reached. This equilibrium will be attained when the effects of the first period's added spending have been completely exhausted. Income will then be higher than prior to the change by an amount ten times the change in the rate of investment spending.

This conception of the multiplier can best be illustrated by Figure 6–2. Assume the rate of investment to increase permanently, shifting the investment function to $I'I'$. The equilibrium level of national income will shift from OX to OX'. The multiplier is shown by the relationship between XX' and MM'.

The multiplier may work downward as well as upward. A reduction in spending will generate some multiple of itself in income effects. The multiplier analysis also depends upon rather restrictive assumptions. It assumes, most importantly, that some reasonably stable relationship does exist between added income and added consumption spending. Secondly, it assumes that secondary effects on behavior of individuals and firms may be neglected. These restrictions limit the applicability of the multiplier conception, but it remains a useful device in showing how a change in spending can generate multiple effects on income. It will be especially useful in succeeding chapters when we attempt to analyze the influence of government spending on economic activity. Actually, the multiplier conception has been developed in connection with discussions of governmental additions to the spending stream.

Conclusions Drawn from the Simple Model

The simplest model of national income determination has been presented in outline form. The actual level of national income at any particular time has been shown to depend upon the whole set of spending-saving-investing decisions made by individuals, private families, and business firms. The analysis demonstrates that income does tend toward an equilibrium level at which intended saving is equal to intended investment. But this equilibrium level of income may be high or low. The real flow of goods and services may be far below capacity output of the economy or, on the other hand, the money income generated may cause serious inflation to occur. The relevant decisions may generate reasonable stability in income over time or they may generate violent cyclical swings between boom and bust

periods. The simple model of national income determination does little toward enabling us to clear up these difficulties.

NATIONAL MONEY INCOME, EMPLOYMENT, AND PRICES

The "ideal" level of national income would be that level which utilizes available resources fully and at the same time maintains stability in the level of prices. "Full employment without inflation" is agreed by most students of the problem to be the ultimate desirable goal. Leaving aside until later chapters the possibility that this may be an unattainable goal in our current institutional structure, we must now examine the simple model of income determination in light of this goal. Since the level of income appears, in this model, to depend solely on the separate and independent decisions of families and firms to spend, to save, and to invest, there would seem to be no reason why the goal of "full employment without inflation" would ever be achieved. The desirable level of income would appear to be one possible solution out of the many, and it would seem sheer accident should it occur.

This inference, properly drawn from the limited model of income determination, is overly extreme. It may be called the extreme "Keynesian" conclusion as contrasted to the extreme "classical" conclusion that the desirable "full employment without inflation" national income would somehow tend automatically to be generated. As is usual, neither extreme is correct, and the proper approach lies somewhere between the two. The simple model of income determination does leave out of account important forces which work toward bringing real income toward desirable levels.

The most important factor omitted in the simple model is the role of prices. We have demonstrated how shifts in spending-saving habits can cause shifts in national money income. We have not fully connected this with shifts in real income and employment. If all prices are absolutely fixed, or rigid, then any reduction in national money income must lead to a reduction in real income. The only response open to a firm faced with declining demand for its product is a reduction in the rate of production. On the other hand, if prices are flexible, and they must be to some extent, a firm may respond in either of two ways or both. It may reduce production rates, or it may reduce selling prices. If a reduction in spending does nothing more than cause reductions in selling prices, these reductions may be

sufficient to increase quantities demanded so that real income is not reduced at all. If all prices were freely flexible, this would indeed tend to happen. And, although shifts in spending-saving plans would cause the level of prices to move upward and downward, real income would tend to be reasonably stable at full employment levels.

We recognize, of course, that free flexibility in prices cannot exist, even in the most perfect markets, and, further, that, given the institutional rigidities which characterize the American economy today, prices and costs are indeed "sticky," especially in the downward direction. During the recession of 1957-58, product prices fell little, if at all, on the average. Because of this fact, we may state that a reduction in spending will almost always tend to generate an accompanying reduction in real income. Nevertheless, some potential flexibility in prices must be present at all times, and this will generate pressures toward price reductions during periods of serious unemployment. Levels of income characterized by severe unemployment of economic resources can scarcely be called "equilibrium" levels as might be inferred from the simple model discussed previously.

On the up side, prices are freely flexible. Any increase in demand will tend to generate price increases, even if resources are not fully employed when the increase occurs. During periods of unemployment, increases in spending will tend, therefore, to generate increases in real income and in the price level. During periods of substantially full employment, increases in spending will tend to cause an increase in the price level without increasing real income greatly.

Another major equilibrating factor which the simple model leaves out of account is the functioning of the monetary system and the interest rate. Although it is difficult to introduce this subject fully at this point due to the assumption that we are leaving governmental action temporarily out of account, some brief mention is perhaps warranted. The simple model assumes that saving and investment are wholly unrelated. This is, of course, not realistic. The saving decisions made by firms are identical to investment decisions in many cases; firms withhold profits in order to invest. But, more importantly for our purposes, there is also a close relationship between saving decisions of individuals and investment decisions of firms. This is the relationship which the classical economists depended upon to maintain national income in equilibrium at a reasonably full employment level.

The connection is provided through the workings of the monetary and banking system. As private people save, they normally place funds in the commercial banks. And business firms, when they seek to undertake net investment, must secure funds. They call upon the banking system and other financial institutions for such funds. The interest rate tends to move in such a way that saving and investment are brought into equality; at least this is the classical argument. If the flow of saving should exceed the demand for loanable funds, banks would find it profitable to reduce lending rates. This would stimulate firms to demand more loans and at the same time stimulate individuals to reduce saving. In this way, saving and investment would move toward equality. Or, contrariwise, if the flow of new saving should fall short of the demand for loanable funds, banks would find it profitable to increase lending rates. This would stimulate additional saving and at the same time reduce demand on funds, or investment. This equilibrating force is reduced in effectiveness by the character of modern monetary and banking systems. The amount of loanable funds available to banks does not depend closely upon the amount of new savings. Secondly, the relationship between saving and the changes in the interest rate can be questioned. It may be concluded, therefore, that this "classical" adjustment mechanism, although it should not be overlooked, cannot be depended upon to maintain stability in national income. In spite of this, it cannot be disputed, however, that the mechanism does provide some force working toward stability.

A third factor overlooked or neglected in the simple model of income determination is the influence of real assets on spending-saving decisions. If this influence is incorporated with movements in the price level, yet another force is introduced which tends to keep the level of national money income somewhat more stable than the simple model would indicate.

CONCLUSIONS

The simple model of national income determination indicates that the level of income depends on the spending-saving decisions of private families and firms. This makes it appear that the level of income actually generated is wholly accidental and may or may not be desirable. Either serious unemployment or inflation may be present. These conclusions appear to be extreme when the necessary qualifications neglected in the simple model are taken into account.

When national income falls below full employment levels, pressures are placed on firms and factor owners to reduce prices. Insofar as prices may be reduced, real incomes need not fall with money incomes. Some additional equilibrating forces are present in the operation of the monetary and banking system. The excess of loanable funds during downswings may act to reduce interest rates which may, in turn, stimulate investment spending.

In spite of these necessary modifications, the broader conclusions drawn from the simple model remain true. Experience as well as analysis teaches us that income stability as a "full employment without inflation" level has not characterized the United States economy. As the economy operates today, there is no built-in mechanism which will guarantee economic stability in this sense. From this conclusion, it does not necessarily follow that the proper role of government is that of so affecting spending streams as to maintain "stability." This topic remains to be discussed in later chapters of this part. But having, in this chapter, explained very briefly the principles of income determination in an economy without government, the next three chapters must deal with the impact of the government itself upon the level of income, employment, and prices, quite apart from any deliberate manipulation of the budget for stabilization purposes.

Chapter 7 THE ECONOMIC EFFECTS OF BALANCED BUDGETS

The effects of the fiscal structure on the macroeconomic variables (national income, employment, price levels) will depend on the relationship between government spending and taxation. The taxing process withdraws purchasing power from the private income flow; the public spending adds purchasing power to this flow. We shall examine each of three possible cases in this chapter and the two that follow. Here we analyze the effects of fiscal action when the two sides of the account are kept equal, that is, when the cash budget is balanced. Deficit and surplus financing will be discussed in Chapters 8 and 9.

Budget balance as used in this chapter will mean the equality between governmental receipts from the private economy and government payments to the private economy. This is not the appropriate place to introduce more careful distinctions between the executive budget, the cash budget, the capital budget, and similar terms. These distinctions will be made in later chapters when the process of budget making itself is examined.

Meaningful analysis requires some comparison of alternative situations. We say that we seek to determine the effects of a balanced budget, but we should be more precise if we stated that the purpose is that of determining the effects of *changes* in the size of the government's budget, assuming that both sides change equally. Total government spending (federal and state-local) amounts to more than $100 billion annually in the United States. Even on the assumption that all of this spending is continually financed from current tax revenues, what would be the result of reducing this budgetary total to $100 billion? Or of increasing it to $170 billion? These are especially important questions in the 1960's. If the Cold War continues with

the technological armaments race becoming more and more costly, significant increases in the federal government's outlay on defense may be expected. Even if taxes are raised sufficiently to keep pace, what impact will the increasingly higher budget have on the total economy? Or, suppose that some genuine disarmament could be attained. Would a large-scale reduction in national defense outlay, fully offset by corresponding tax reduction, plunge the economy into depression as the critics of the capitalistic system predict?

Three competing hypotheses have been advanced in attempts to answer such questions. A useful approach seems that of discussing these three hypotheses separately.

THE NEUTRALITY HYPOTHESIS

The "classical" economists were not directly concerned with the effects of budget changes on the level of income, employment, or prices. For one thing, government did not loom large in relation to the private economy prior to the last half century. Secondly, the earlier students assumed that the budget remained in balance. They did not conceive of the possibility of deliberate unbalance with a view toward achieving greater economic stability. It seems appropriate to define as "classical" the proposition or hypothesis which states that, so long as balance between government outpayments and government revenues is maintained, the effects are canceling, and a budgetary change is neutral in its total effect on the economy.

This argument recognizes, of course, that government spending represents an addition to the spending stream. But taxation represents a withdrawal from this same spending stream. So long as the net withdrawal is no greater or no less than the addition in any particular period, the neutrality hypothesis seems to follow.

For pure transfer expenditures, the hypothesis appears reasonably correct. If the fiscal action represents nothing more than a transfer of purchasing power from one group to another within the same economy, and if the spending-saving habits of the two groups are approximately the same, the effects seem to cancel out. The reduction in spending by taxpayers would be offset by the increase in spending by recipients of the transfer payments. In one sense, the two groups here may be called positive and negative taxpayers. The conclusion here assumes, of course, that incentives to invest and to work are not modified by the change in budgetary level. If an added tax burden reduces investment spending more than the added transfer

payments increase investment spending, the total effects will be to depress income and employment; or vice versa in the opposing case. But as an approximation for short-run analysis, these effects on investment and work may be neglected, and the neutrality hypothesis accepted for transfer expenditures. Thus, if an additional $5 billion in transfer expenditures were undertaken, to be fully tax financed, no significant short-run effects on real income, employment, and prices should be exerted.

This might prove a useful conclusion when the attempt is made to predict the result of the adoption of a share-the-wealth plan, or some Townsend-type scheme; but, as earlier chapters have shown, major budgetary changes in the past have involved, not transfer expenditure, but the so-called "productive" expenditures. The recently accelerated expansion in national defense spending has taken the form of additional government purchases of real goods and services: missile components, atomic submarines, research, etc. Does the neutrality hypothesis apply here? Let us suppose that an additional $10 billion is added permanently to the national defense budget, let us say for the construction of fall-out shelters, with this large budgetary increment to be financed fully out of the proceeds of increased tax revenues. The actual outlay would add directly $10 billion to the spending stream in the initial period. The new taxation would withdraw $10 billion, but only nine tenths of this would have been returned to the income flow as consumption expenditure (on the basis of the income-spending ratios assumed in the last chapter). The net effect would seem, therefore, to be expansionary. Since some of the tax payments would have otherwise been saved, the net result of balanced budget changes does not seem neutral. This idea is central to the second hypothesis, discussed later; but before leaving the neutralist hypothesis completely, it will be useful to examine some of the qualifying factors which make this initial hypothesis more nearly correct.

If the monetary-banking system is operating in such a way that the amount of new saving and the amount of investment are closely tied together, the reductions in saving caused by the added taxation might, by way of the squeezing of available loanable funds, reduce investment outlay. In this case, the neutrality hypothesis might hold even for budgetary changes embodying changes in the rate of real purchases. If, for example, the added taxation should take the form of a levy on business profits, this might reduce both saving and investment simultaneously. Or as an alternative case, the added taxation

might reduce private incentives to work, causing real income to fall significantly, perhaps enough to offset fully the expansionary effects of the larger budget. These various possibilities are important, and we shall discuss them somewhat more carefully later. At this point, however, we may conclude only that, for short-run analysis, the neutrality hypothesis seems less correct for budgetary changes involving governmental purchases of real goods and services than for budgetary changes involving transfer expenditures.

THE UNIT MULTIPLIER HYPOTHESIS

The second hypothesis, which we may label the "unit multiplier" or "Keynesian" hypothesis, arises directly from an extension of the investment multiplier analysis to balanced budget changes. The hypothesis embodies the concept of a "balanced budget multiplier" with a numerical value of unity under certain restricted and specified conditions. In more precise terms, the hypothesis states: *A change in the size of the budget, while maintaining balance, will exert an effect on national money income which is approximately equal to the change in the budget.* In other words, for each dollar increase in the size of the balanced budget there will be a dollar increase in national money income, and for each dollar reduction in the balanced budget there will be a dollar reduction in national income.

This hypothesis suggests that both the size and the degree of change in the governmental budget, even if continual balance between expenditures and revenues is secured, are important determinants of the level of income, employment, and prices. Major changes in government budgets can cause either expanded production or inflation on the upside or depression and unemployment on the downside. The hypothesis makes the influence of the public sector significant even if revenues and expenditures are equal.

The mechanics of computing the balanced budget multiplier are relatively simple. If, as we have previously assumed, individuals spend, on the average, nine out of each ten additional income dollars received, a tax bill of $10 will reduce the rate of private spending by only $9. But the $10 in revenue will make possible a full $10 public outlay on real goods and services. Thus, a net addition of $1 is made to the spending stream, which, with a multiplier of 10, will ultimately generate $10 in additional income. The increment to national money income is equal to the increment in government spending. The balanced budget multiplier is equal to one, and this

"magic" number appears to hold regardless of the assumed values for the marginal propensity to save. In our numercial example here, the value of one obtained for the balanced budget multiplier does not depend at all on the marginal propensity to save being one tenth. A value of unity would have resulted from a marginal propensity to save of one fifth or one eighth.

The unit multiplier hypothesis has been stated in its most extreme form without necessary qualifying assumptions. For the analysis to be correct, several conditions must be present. These may be discussed separately.

Necessary Conditions for Unit Multiplier Analysis

1. *The full amount of the government spending change must take the form of purchases of real goods and services currently produced in the domestic economy.* The first part of this requirement has already been mentioned. Expenditures representing transfer payments, for example, veterans' benefits, generate no multiplier effects. For these, the neutrality hypothesis is more appropriate.

Even if government expenditures involve purchases of real goods and services, however, additional requirement must be met. These goods and services must be from *current production* in the economy. If government purchases previously produced goods out of stocks, the recipients of public payments may or may not treat such payments as ordinary income shares. As an illustration of this, the expenditure for land purchased as rights of way for the new Interstate Highway Network will not likely generate the same effects as would payments for military vehicles. Landowners receiving the payments will not consider these as ordinary income. They will not return so large a portion to the spending stream as would be the case with those wage, salary, and profit recipients resulting from the military vehicle purchase. Hence, the unit multiplier hypothesis, which depends on the relative stability of the income-spending relationship, is not fully applicable to expenditure on other than currently produced goods and services.

The last phrase of the first condition states that government purchases must come from the *domestic economy*. If real goods and services are purchased from foreign rather than domestic sellers, the unit multiplier hypothesis clearly is not applicable. United States purchases of military supplies in Germany and France to support

overseas bases do not exert direct multiplying effects on national income.

2. *The balanced budget change must be financed through taxes having roughly the same effects as the personal income tax.* This condition is necessary in order to insure that the income-spending relationship can be applied to the tax side of the operation. In other words, the tax change must appear to individuals as an income change if the hypothesis is to hold. Changes in the personal income tax, our largest federal revenue source, will appear as changes in net incomes; but if alternative taxing methods are employed, the effects on individual spending plans are not clearly discernible, especially in the short run. If individuals pay taxes without realizing it, as must be partly true for all sorts of indirect taxes, that is to say, if a "tax illusion," exists a tax change may not cause spending to change in a predictable way.

3. *The marginal propensity to save for taxpayers must be equal to the marginal propensity to save for the suppliers of government goods.* The need for this qualification is obvious. If, on the average, taxpayers should reduce spending more, proportionately, than suppliers of services purchased by government increase spending as a result of a balanced budget increase, the multiplier must be less than unity. If the reverse is true, the balanced budget multiplier might exceed unity. The validity of the unit multiplier hypothesis depends upon a reasonably uniform spending pattern among the taxpaying and resource-supplying groups. In some cases this condition may not be met, but, for major budgetary changes, the groups in question overlap to some extent.

4. *Investment spending must not be changed significantly by the budgetary change.* In most discussions of the multiplier, investment spending is assumed exogenously determined. But if a major increase in the government budget does affect the business climate in such a way as to affect investment decisions, definitive conclusions as to final effects can hardly be predicted. The possible influences here may work either way. A sizable increase in the federal budget may, on the one hand, discourage private investment because of fears of increasing central government control over economic activity. On the other hand, the increase in the budget may prompt businessmen to invest more in the expectation that the consequences of the fiscal action will be inflationary. Opposite conclusions follow for a reduction in the size of the balanced budget.

5. *The monetary-banking framework must allow attempted changes in spending to be carried out.* This condition states that some elasticity in the money or credit supply must be present. Whether or not this condition holds depends on the actual monetary setting. In an economy characterized by rigidity in the supply of money and credit, the unit multiplier would not be at all applicable since the indicated effects on spending would be prevented, wholly or partially, by monetary factors. This is especially true when increases in budget size are analyzed. In attempting to determine the effects of a major increase in the federal budget, say $5 or $10 billion, some consideration would have to be given to the limits of monetary expansion. The income multiplier requires that predicted spending flows actually be accomplished. But monetary restrictions, either directly or indirectly exercised, may stifle expansion. The American economy is, and has been, characterized by considerable elasticity in the usage of money and credit. We may conclude, therefore, that this monetary setting is favorable to the validation of the unit multiplier hypothesis in all situations except those involving significant increases in the size of the balanced budget.

6. *Individual behavior patterns must not be directly affected by the budgetary change.* This condition is a standard one for much of economic analysis, but any complete listing requires that it be included. Specifically, the tax change must not significantly affect the work-leisure choices of individuals. If, for a large budget increase, individuals choose to do less work and to enjoy more leisure, the budgetary impact on real income will be lessened. Or, contrariwise, the reduction in taxation made possible by a budgetary reduction might stimulate more effort, and, in this way, higher real income.

The same qualification applies to the spending side. If the governmental purchasing process should cause inefficiency or vice versa, real income is modified. The presence of important effects of this sort anywhere in the fiscal system will reduce the applicability of multiplier analysis.

Time Sequence of Balanced Budget Multiplier. We have discussed the necessary conditions for the unit multiplier hypothesis. Let us now assume all of these conditions satisfied and re-examine the hypothesis itself. What does the unit multiplier mean? A dollar addition to the budget generates a dollar addition to national money income. But, recalling the investment multiplier discussion of the preceding chapter, the timing factor is all important. Are we con-

sidering a single once-and-for-all change in tax-financed public spending? Or, are we considering a change in the *rate* of tax-financed spending on a permanent basis? The unit multiplier, as usually stated, is "timeless"; that is to say, it is applied to changes in the rate of spending. It represents the change in income resulting from a permanent change in the size of the budget, provided sufficient time elapses to allow the system to reach a new equilibrium level. Therefore, in respect to actual calendar time, for which separate budgets are made, the unit multiplier hypothesis is applicable only to *long-term* budgetary changes. The hypothesis enables no prediction to be made concerning the effects of a budgetary change over a one-, two-, or three-year period. For example, suppose that federal spending were reduced by $5 billion for fiscal 1962 along with an equal reduction in taxes. If the marginal propensity to save is one tenth, total spending will be reduced only by one half billion in the initial period. Eventually, if the budget were to remain at the lower level, national money income would reach an equilibrium position some $5 billion lower than the equilibrium assumed present before the change. But this new equilibrium will be established only after a long succession of spending periods.

This time factor sharply reduces the aid which the unit multiplier hypothesis gives in making real-world predictions. For short-run periods, the value of unity loses its "magic," and the multiplier effects of a budget change depend on the assumed values for the marginal propensities to save. In all cases, the short-run balanced budget multiplier will be less than unity, accepting all of the necessary qualifying conditions. Of course, if some of these conditions were to operate in a strongly complementing fashion, the multiplier might equal or even exceed unity in particular instances. But if investment is not affected, and all sectoral propensities are roughly equivalent, an increase in the personal income tax with the proceeds used to finance purchases of currently produced domestic goods will generate a national money income change over short-run periods only fractionally as large as the budgetary change. If full employment is present, this budgetary increase will cause price increases; if unemployment is severe, real income will also move upward.

Appraisal

What may we conclude from this rather careful analysis? The effects of a balanced budget change on the total economy, on national

income, employment, and prices depend on many factors. These involve the kind of taxation and spending change contemplated, the climate of business and individual opinion, the spending-saving pattern and its stability among groups and over time, and many other factors. And, perhaps more importantly, the effects will differ in different time periods. The longer the time period under consideration, the more the neutralist hypothesis rather than the multiplier hypothesis is likely to hold. The shorter the time span, the more likely the effects would seem to be those predicted by the multiplier analysis, appropriately modified. But the unit multiplier, as such, does not seem to be a valid theorem for predictive purposes. At best, multiplier analysis yields the less heroic theorem that budgetary changes upward are expansionary and budgetary changes downward are contractionary. Beyond this, little that is definite may be stated.

THE CRITICAL LIMIT HYPOTHESIS

The third hypothesis concerning the effects of balanced budget changes on the total economy is not directly comparable with the two discussed. These two, which we have called the "classical" and the "Keynesian," are similar in that each hypothesis predicts the effects of budgetary changes within a reasonably stable institutional setting. Although long-run and short-run considerations are both included in the analysis, even "long-run" effects result from comparisons that assume many features of the behavior pattern to remain unchanged.

The third proposition, or hypothesis, which we shall now discuss, differs from the first two in precisely this respect. It is not a prediction of the effects of budgetary changes under fixed conditions. It claims to be a genuine long-term and dynamic prediction, and its support is sought in long-run shifts in institutions. Proponents of the hypothesis are not especially concerned with small budgetary changes, nor have they analyzed the effects of budgetary reductions. They are concerned with the high-level budget which has characterized the United States since World War II and with major upward shifts in this budget over time. The hypothesis states that the continued high-level and increasing budget will so affect behavior, private and political, as to jeopardize seriously the inherent stability of the capitalistic structure.

It is difficult to treat this proposition briefly or systematically, largely because it has never been rigorously formulated. This should not indicate, however, that the proposition is unimportant or unde-

serving of careful analysis. The basic thesis is that a democratically organized society cannot long maintain a government share of the economy representing more than a determinate critical percentage of total resources while preserving the internal discipline necessary to prevent monetary inflation. Long-run and continual inflation is the predicted result of governmental budgets as large as those now present, even if full balance between tax revenues and public expenditures is rigorously maintained.

The particular figure of 25 per cent was advanced by Colin Clark, noted Oxford University statistician and economist, in his initial statement of this proposition. One of his early statements follows:

> The data appear to give considerable support to the hypothesis that once taxation has exceeded 25 per cent of the national income influential sections of the community become willing to support a depreciation in the value of money; while so long as taxation remains below this critical limit the balance of forces favours a stable, or occasionally increasing, value of money [*Economic Journal*, 1945, p. 380].

Clark supports this 25 per cent hypothesis largely on statistical evidence, drawing upon the experience of several countries and from several time periods. The critics of the hypothesis have attacked the legitimacy of the 25 per cent figure, arguing that surely the critical limit, if indeed one exists, will depend on the circumstances of time and place, and will, therefore, vary from country to country and from time to time. The 25 per cent hypothesis has, however, gained considerable support, not especially among academic circles, but among business and professional groups in the United States. The 25 per cent figure was used as the maximum personal tax limit in a proposed constitutional amendment that was much discussed in the early 1950's. Various forms of this tax-limit amendment passed many state legislatures, but further action was not taken.

If the idea of a specific critical maximum is dropped, empirical evidence over the period since World War II, when large budgets have been the rule, supports the inflationary hypothesis. The period has been characterized by almost constant inflation in the level of prices. But has this decline in the purchasing power of money been due to the large government budgets? Or are there other and better explanations to be found in monetary policy, in institutional rigidities in the wage-cost-price structure, or still other areas of economic life? For the inflationary hypothesis to deserve more consideration, some

supporting argument is required. The mere correlation between budget size and inflation is not sufficient.

A supporting argument can be developed on two premises. First, as the size of the budget increases, political pressures can be predicted to develop for inflation which the institutional structure cannot withstand. Secondly, the effects of the high-level taxation required to sustain the high-level expenditure may be such as to cause inflation. These are two separate points, and we shall consider them in sequence.

Why should political pressures toward inflation develop? If private individuals react negatively to taxation beyond certain limits, the direct result should be a refusal of representative legislative bodies to support high-level budgets. If, however, important items in the high-level budget appear irreducible, for example, interest on the national debt, payments to veterans, and minimum national defense outlays, substantial reductions in spending might be impossible to achieve. Appropriations for expenditures will take into account pressing needs for collective services, but the separate taxing process will not fully correspond. Representative bodies will refuse to raise sufficient revenues to finance approved public expenditures. Budget deficits will arise, and these will be financed by currency creation or its equivalent. Inflation will be the inevitable result. If this is the prediction, the hypothesis no longer applies to the effects of balanced budgets. Rather the prediction states that high-level budgets will not remain balanced, and that deficits will be allowed to develop. Insofar as this is true, inflation will occur in the full employment setting, as will be demonstrated more fully in the following chapter.

The 25 per cent hypothesis seems, however, to be somewhat more comprehensive than this. The implication is that, even if the balance between revenues and expenditures is maintained, monetary stability will not prevail. No attempt is made to predict the effects of the high-level budget independently of the institutional structure. And here the analysis sharply differs from that of the balanced budget multiplier. The 25 per cent hypothesis involves a prediction about the monetary framework itself. In other words, the hypothesis introduces a specific prediction concerning the fifth condition discussed in connection with the multiplier. The prediction is that the monetary system will adjust so as to allow inflation to take place.

But the reasons why inflation or expansion will occur as a result of the high-level budget are different from those adduced in support

of the multiplier hypothesis. The 25 per cent hypothesis, or the variations from it, involves predictions about factors external to the actual spending flows. The high-level budget requires taxation sufficient to impair personal incentives to invest and to work, and business incentives to produce. Especially does it make firms less reluctant to grant wage increases. Insofar as these side effects of the high-level budget are in the direction of reducing real income, whereas the monetary effects are toward increasing the money supply, the inflationary results follow.

On balance, how may we evaluate or appraise the 25 per cent hypothesis? In the first place, competent students of fiscal problems are agreed that there is no special significance in the 25 per cent figure. It seems reasonable that the critical maximum limit for taxation will vary with the attitude and outlook of the population, the kinds of expenditure undertaken, and the form of the new taxes levied. The hypothesis is helpful in focusing attention upon the institutional or long-term variables, however, and many of the particular points made do seem valid.

THE "INEFFICIENT PURCHASER" MODEL

The acceptable elements of the critical tax limit hypothesis may be preserved in a less restricted model which introduces an element left out of account in almost all of the discussion. I have called this the "inefficient purchaser" model in order to emphasize the additional point which is incorporated. It is common knowledge that governmental units, notably the federal government, do not purchase economic goods and services at prices which are comparable with those facilitating exchange of goods among private individuals and firms. In private market exchange, a profit-seeking firm or a utility-maximizing family will be party to the contract. Governmental units do not seek particular gains through trade, and this is especially true when we come to consider the actual institutional process through which governmental purchases take place. In many cases, governments deliberately build into the purchase policy various devices which serve to increase the prices paid for real goods and services. Numerous examples may be called to mind, but at this point it is sufficient only to mention one or two of these. Certain federal governmental contracts are subject to the provisions of the Walsh-Healy or Davis-Bacon Acts. These allow the Secretary of Labor to determine minimum prevailing wage levels; the obvious effect is to increase the

costs of the facilities to government. Many contracts related to national defense are let on a cost-plus basis. Firms are provided little incentive to increase efficiency or reduce costs. The net result is higher prices paid for real goods sold to government. The conclusion that the government pays higher prices for its goods and services purchased than would be the case with ordinary market purchase seems inescapable.

Let us see how this changes the analysis of the preceding sections. The balanced budget multiplier analysis assumes that the real value of the tax dollar given up by private people is equal to the real value of this dollar when it is expended by government. But the recognition of government as an "inefficient purchaser" requires a differential between the real value of the tax dollar and that of the public expenditure dollar. The resources given up by private people when they pay taxes are greater than the value of the resources secured by government when it spends the tax proceeds. The government pays a higher unit price for real goods and services.

The effects of the "inefficient purchasing" of government are the same as those of inefficient purchasing by private firms or families. We have discussed briefly the claim that the taxation required to support high-level budgets may generate such behavior on the part of private firms. The current corporate income tax rate of 52 per cent does cause private firms to undertake certain wasteful expenditure since they must balance off only a 48-cent return against each additional dollar outlay. Firms are less efficient in their purchase policy than they would be with lower tax rates. The high personal income tax may exert similar effects on individual behavior. The high marginal rates provide incentives to convert much money income into income-in-kind. The expense account becomes more valuable as a feature of a job. The individual becomes also a more inefficient purchaser.

Combining the "inefficient purchaser" effects on both the taxation and the public spending side, we get interesting results. If all prices in the economy are inflexible downward, that is to say, if prices cannot fall, we find that the net impact of a higher-level budget may be both inflationary and contractionary. As the government assumes a larger share of total economic resources, the average level of prices must be driven upward. The government secures sufficient funds to purchase all the real goods and services desired, even at the new and higher level of prices. But private people cannot, with

the purchasing power remaining after taxes, purchase all of the goods and services remaining in the private sector. Inventories will be accumulated, and real income and employment will fall. Unemployment will be accompanied by price inflation.

Of course prices are rarely completely inflexible. If we assume some downward flexibility in prices, both for final products and for resources, we get differing results. The increased budget will generate inefficient purchasing by both the private and public units. This will create pressures for excess supply in private product and factor markets since fewer products will be purchased for the same outlay. But the excess supplies will push prices downward in both product and factor markets. The over-all price level need not change, but for those sectors of the economy selling to the government, inflation in prices will take place. This may be offset by deflation in remaining sectors of the economy. Here the results of the budgetary increase are reflected largely in a shift in the price levels for various sectors of the economy. Unemployment need not exist for any significant period of time, but real income will tend to be lower due to the inefficiency generated.

The foregoing cases describe the effects of the budgetary increase on the assumption that the monetary authority remains passive. But this seems unlikely to occur. If the budgetary increase does generate inflationary pressures for some sectors, but, at the same time, deflationary pressures on other sectors of the economy, the current climate of opinion would surely influence the monetary authority to inflate the currency. Money and credit would be made more freely available, and general inflation would likely result.

A hardheaded evaluation of this "inefficient purchaser" model, incorporating as it does features of the critical tax limit hypothesis, indicates that inflation in the price level will result from an increase in the size of the government budget during periods of substantially full employment. To the extent that unemployment is present, some of the inflationary impact may be taken up in real-income and employment increases. But in all cases the effects of the budget change will be expansionary. This conclusion, when coupled with the analysis of the balanced budget multiplier, suggests that the classical hypothesis is the least satisfactory of the group in explaining the effects of high-level budget changes embodying other than transfer expenditures.

As we saw in Chapter 4, governmental budgets of the size now in being were unknown prior to World War II. And, for some purposes, two decades is a long run. But for the accurate assessment of the effects of high-level budgets, the experience has been far too short to be of great value in providing direct evidence. From the evidence that is available, the hypothesis that the large budgetary increases lead to inflation, whether the budget keeps in balance or not, seems to be supported. If national defense expenditures rise still more in the decades ahead, the dangers of inflation seem certain to increase.

THE IMPERIALISTIC HYPOTHESIS

Does it follow from the preceding conclusions that a significant reduction in the size of the federal budget would generate severe depression? If so, are not the critics of the capitalist system justified in their arguments that high-level income and employment are maintained largely by high-level defense expenditures? Can the United States afford to settle the Cold War? We may call this line of thinking the "imperialistic hypothesis."

On the basis of the various considerations discussed, a significant reduction in defense outlay, even if fully accompanied by tax reduction, would probably generate considerable deflationary pressures. If nothing else were to be modified, unemployment would arise. And, given the rigidities present in the price and wage structure, this unemployment might be of fairly permanent duration. But it is wholly improper to argue that this sequence of events is the necessary result of the slacking up in defense outlay. It should never be assumed that the *other things* in the problem remain unchanged.

The analysis examines changes in total government budgets, not in subsectors. Therefore, one means of avoiding the deflationary impact would be by substituting nondefense expenditures for defense expenditures, at least over a transition period. The reduction in federal taxes made possible by a significant reduction in the defense budget would allow states and localities to increase taxation and expand spending on many needed municipal services. Private investment spending might respond quite favorably to the tax reduction. Business firms would adopt more efficient purchase policy. Investment in underdeveloped countries might be encouraged. There are many possible means through which the economy might adjust to the reduction in defense outlay. The imperialistic hypothesis cannot be

supported on any grounds, and empirical evidence is at hand to refute the hypothesis even if reasoned arguments are not sufficient. The experience of 1946 is still close at hand. Many dire predictions were made to the effect that demobilization and the reduction in government outlay in 1945 and early 1946 would produce serious short-run depression and unemployment. These predictions should have been reversed; inflation, not unemployment and deflation, was the consequence. While conditions at the time of any subsequent budgetary reduction of the scope contemplated might be different from those prevailing in 1946, the experience should serve to introduce much skepticism into any predictions concerning the contractionary impact of a demobilization. Perhaps more importantly, if the contractionary effects were to be exerted, alternative monetary and fiscal action by the federal government could surely be introduced as an offsetting force.

CONCLUSIONS

In this chapter were discussed the effects of changes in the balanced budget on the total economy. The federal and state-local budgets were not distinguished in this discussion because the effects are similar. First discussed was the hypothesis implicit in the classical economists' reasoning. Budgets were assumed to remain in balance, and because of this balance, the budget was assumed to be neutral in its impact on the economy. It was shown how this is applicable for transfer expenditures, but not for governmental purchase of real goods and services, except under special conditions. The major changes in budgets have come through changes in the purchases of real goods and services.

The so-called "unit multiplier hypothesis" was discussed quite carefully, outlining the necessary conditions required for the prediction to hold true. In evaluating the hypothesis, it was concluded that the value of unity is not especially significant, but that the multiplier analysis generally is helpful in demonstrating the destabilizing force of the balanced budget change.

The 25 per cent hypothesis was found to be suggestive at several points, but again the figure of 25 per cent was shown to be unimportant as a critical maximum tax limit. The suggestions of value contained in the hypothesis were incorporated into a discussion of the "inefficient purchaser" model. This model introduces the particular

form of government purchases and shows how the results of a balanced budget increase will likely be inflationary.

Assessing the entire discussion, it was concluded that sizable increases in the balanced budget will probably generate inflationary pressures, while sizable decreases will probably generate deflationary pressures. This conclusion makes inflation appear as a danger if national defense outlay is to be expanded in years ahead. On the other hand, the deflationary effects of balanced budget reduction require that the "imperialistic hypothesis" be discussed. Here it was shown that the predictions of deflation and depression, even if true, need not apply to defense outlay alone. Many types of offsetting action may be taken to counter a depressing influence of a cut in defense outlay, any one of which would, of course, be more beneficial to private individuals in the United States than an unnecessary continuance of the outlay on armaments.

Chapter 8

THE ECONOMICS OF UNBALANCED BUDGETS I: DEFICIT FINANCING

Budget balance does not insure that the public sector is neutral in its impact and effect on the total economy. Analysis reveals the possible, even probable, existence of important influences on the national income, employment, and prices. Nevertheless, the balanced budget does reduce to a practical minimum these influences. Specific unbalance in the budget might, in any particular instance, achieve greater neutrality. But legislative bodies charged with the responsibility of making appropriations, and the executive departments which prepare budgets, are not omniscient. They can hardly be expected to introduce just the amount of unbalance required to insure over-all neutrality, even if this were desired.

As a general rule, unbalanced budgets will exert more effects on income, employment, and prices than balanced budgets. This chapter and the one that follows will discuss these effects.

Budgets may be unbalanced in two directions. Government expenditures may exceed tax revenues or tax revenues may exceed government expenditures. In this chapter budget unbalance of the first type will be discussed. We shall try to ascertain the economic effects of *deficit financing*, the term commonly used to refer to the first sort of budget unbalance. As in the analysis of balanced budgets in the preceding chapter, we shall leave off for now discussion of the desirability or undesirability of deficit financing. Such discussion will be postponed until Chapter 10 when the question of appropriate fiscal policy norms will be squarely faced. This chapter is limited to an analysis of deficit financing.

WAYS OF CREATING A DEFICIT

A budget deficit is defined as an excess of expenditures over revenues during a specified accounting period, normally a fiscal

year. There are several ways in which a budget deficit may be created and, as will be shown, the choice among these may be important in determining the economic effects.

Suppose that the federal government's budget is in balance and that a decision is made to create a deficit. First of all, expenditures may be increased while tax revenues remain stable. Secondly, expenditures may be maintained while tax revenues are reduced. Thirdly, both expenditures and taxes may be reduced, with tax revenues falling off more than expenditures. Finally, both government spending and tax revenues may increase, but expenditures increase more than taxes.

A complete analysis would require that each of these four cases be treated separately, but for our purposes we may collapse four cases into only two. Expenditures may increase or tax revenues may fall.

Expenditure Increase

Let us assume that taxes remain stable, either in terms of rates or in terms of total amount collected. A deficit is to be created by an increase in public or government spending. Quite clearly, the effects of this operation will depend on the type or form of the expenditure. We shall first assume that the federal government increases its rate of purchasing real goods and services from the domestic private economy. For example, the expenditure increment may be assumed to take the form of expanded outlay for highway construction.

The effects may best be analyzed in terms of the investment or income multiplier concept developed previously. Assuming, for the moment, that secondary repercussions of the government's action may be neglected, the expanded rate of purchase will increase the total spending (public and private) for goods and services. The net impact must be expansionary. If unemployed resources exist, the increase in government outlay should generate an increase in real national income and in employment. If serious institutional rigidities are present in the wage-price structure of the economy, the increase in real income will likely be accompanied by an increase in the level of prices. If, prior to the deficit creation, all resources are employed within reasonable limits, the result of the expansionary force will be an increase in the price level, that is, inflation. Little, if any, increase in real, as opposed to monetary, national income will take place.

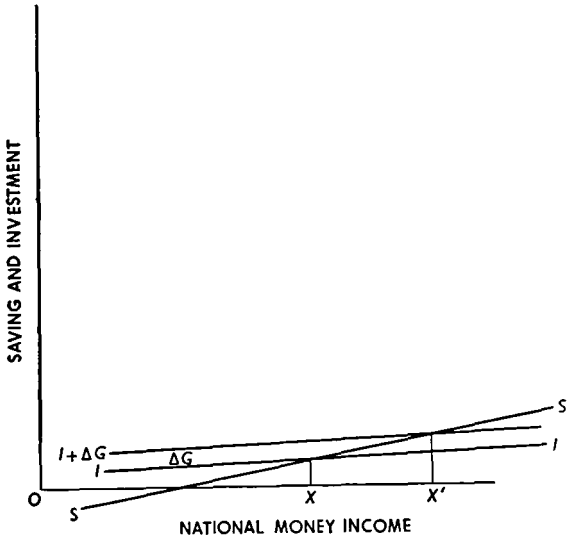
In either case, national money income will go up as a result of deficit financing.

To what extent will national money income rise? Here we may rely directly on the analysis of the investment multiplier. If the additional expenditure is financed in such a way that purchasing power in the private sector is not reduced, the full multiplier effects will be exerted. National money income will rise by the full amount of the additional public expenditure during the initial spending period. As this additional income remains in the circular flow through successive income periods, the total addition to national money income will be some multiple of the increment to public spending. If the addition to spending takes the form of a single once-and-for-all outlay, national money income in any single period will never increase more than the increase in public expenditure. But if the spending increase takes the more normal form of an increase in the *rate* of expenditure, that is, a shift in the level of outlay with the higher level continuing over several income-spending periods, national money income will tend to increase from its previous level by the appropriately calculated multiple of the change in the government spending rate. The value of the multiplier depends, as we saw earlier, on the marginal propensity to save.

The economic effects of deficit creation in the most simple case may be illustrated in Figure 8–1. The equilibrium level of national money income is OX, and this equilibrium is determined by the intersection of the saving and the investment functions. Savings and investment are equal, both in a planned and realized sense. (Let us assume that previously financed government expenditures and taxes are already incorporated in the saving and investment functions shown.) Now assume that a deficit is created by expanding the rate of public spending, the new rate to continue over an indefinite number of periods. Assume further that the deficit is financed in such a way that private spending power is not lessened nor private expectations seriously modified. The effect is to add an item of spending $\triangle G$, to net investment which takes place in the economy. The new equilibrium level of income is OX', and this is determined by the intersection of the $I + \triangle G$ line with the S line. The increase in national money income is XX', and this increase is some multiple of the increase in spending, $\triangle G$. The multiplier is XX' divided by $\triangle G$. A glance at Figure 8–1 reveals that the value of this multiplier depends on the slope of the saving function.

FIGURE 8-1

Deficit Spending Increases National Money Income



As more general and more realistic assumptions are introduced, the conclusions reached on the basis of this simple model must be appropriately modified. As will be discussed in later sections, the full expansionary effects can take place only if the deficit is financed in a particular manner. And, as was discussed earlier, the effects outlined here arise only if the public spending is on real goods and services produced in the domestic economy. Transfer expenditure, public outlay for capital goods, and public purchases of foreign goods and services will not have the effects indicated. An additional, and important, limitation of the analysis is the requirement that expectations not be seriously affected by the deficit creation. If business firms should modify investment plans or if consumers should change spending-saving plans as a result of the deficit itself, predictions become almost impossible. Shifts in plans as a result of deficit financing may occur, and the impact may be in either direction. If business firms should fear the increasing socialization of the economy that deficit financing might appear to suggest, they might curtail long-range investment spending. On the other hand, if they look upon the deficit creation as a sure means of causing inflation, firms will, in expectation of inflationary profits, expand investment. By and large, the second of

these directional effects appears more likely in the modern world. If this generalization is true, the expansionary effects of deficits are increased.

Reduction in Taxes

Budget deficits may be created without change in the rate of public expenditure. Tax revenues may be reduced. It is useful to discuss this means of creating deficits.

Taxation withdraws purchasing power from the private sector of the economy. A reduction in taxation, with public expenditures unchanged, restores purchasing power to private hands. The initial effect, therefore, of a deficit created by tax reduction is to increase private income receipts. In the first stage, the deficit so created does nothing to increase *directly* either public or private spending. The difference in effect at this first stage distinguishes the tax reduction and the expenditure increase methods of deficit creation.

As private income receipts are increased by tax reduction, individuals and families will be encouraged to increase private spending on goods and services at the second stage of the income-spending process. If the entire amount of the tax-induced income increase should be spent, the effects would be identical with that of the public expenditure increase of like magnitude save for a slight time lag. But private families normally will not spend the full amount of an increase in income. Some portion of the increment will be saved. Therefore, somewhat less than the full amount of the tax remittance will return directly to the spending stream, and only that portion which does directly return will generate multiplier effects on national money income. A tax reduction will tend, therefore, to be less expansionary in effect than will an equivalent increase in public spending, provided that secondary effects of the two operations are similar in the two cases. If a tax reduction should, by reducing high marginal rates of tax on personal income and by reducing business taxation generally, provide an especial incentive for investment outlay, the larger multiplier effects of an expenditure-created deficit might be more than offset.

In order to illustrate the difference between the deficit created by public expenditure increase and by tax reduction, an arithmetical example will be helpful. Let us neglect the secondary effects on individual and business behavior. We shall assume that the marginal propensity to consume is nine tenths; that is to say, individuals

will, on the average, spend nine out of each ten additional income dollars they receive. The tenth dollar will be put into saving.

Let us assume a continuing budget deficit of $1 billion in each case. If the deficit is created solely by an increase in public spending, national money income will gradually rise to a new equilibrium level $10 billion higher than that which prevailed prior to the introduction of deficit financing. This result arises from the simple application of the multiplier, which is 10 in this example, to the net increment to spending.

If the tax reduction method is adopted, a tax remittance of $1 billion will cause only $.9 billion to return initially to the spending channel. National money income will rise gradually to attain a new equilibrium $9 billion above that previously attained. Thus, if the aim were to be that of generating an income level $10 billion higher, a somewhat larger deficit than $1 billion would have to be sustained if the tax reduction method were to be adopted.

PRACTICAL CONSIDERATIONS IN DEFICIT CREATION

The limitations of the foregoing simple models have been emphasized. The clearly defined conclusions emerge only because sufficient restrictive assumptions are imposed. In the real world, factors not explicitly introduced might change the conclusions. The models are, nevertheless, valuable as a starting point in analysis.

About many of the neglected variables, little that is positive can be said. It is impossible to judge *a priori* how business investment plans will react to deficit financing in any particular time. Quite similarly, we know that the spending-saving habits of private families are subject to sometimes wholly unpredictable shifts. The best that can be done here is to use sound judgment in each particular case and to keep the limitations of the analytical models always in mind.

There remain, however, certain factors neglected or glossed over in the simple analytical models of the deficit multiplier about which something more definite may be said. Under specified conditions, a deficit created by an increase in expenditure will be more expansionary than a like deficit created by tax reduction. The two means of creating deficits differ in implementation, however, and, in the real world, such differences should be taken into account. The tax-reduction method has an important advantage in purposeful fiscal policy because deficits can be created much more rapidly. The with-

drawal of tax revenues from the private economy is continuous, therefore, a tax reduction can be made effective immediately. Take-home pay of millions of employed wage and salary workers can be increased within the short confines of a single pay period if the enabling legislation is passed by Congress. On the other hand, public expenditure for real goods and services requires a considerable period of advanced planning. Decisions must be made concerning the type of expenditure to be made; specifications must be drawn; contracts must be let and signed. The lag between legislative action to increase the rate of public spending or real goods and services and the actual process of spending may extend for many months.[1] The very type of public expenditure that can be turned on and off with relative ease is that type which is quite similar to tax reduction in its effects. Transfer expenditure, for example, outpayments for Social Security, may be increased quite rapidly. But such expenditures, as we have already suggested, may best be considered as negative taxes.

When this timing factor is given full weight, the tax reduction method seems to be, on balance, a more effective means of creating a deficit for purposeful stabilization results than expenditure increase. Tax reduction has the additional advantage that the decision concerning the deficit creation can be taken relatively independently of any consideration of the appropriate extension or limitation of government economic activity. Insofar as possible, it seems desirable for society to decide on the appropriate spheres of public and private activity quite separately from fiscal policy. An example may help to clarify this point. A tax reduction can be introduced without debate over the relative merits of particular expenditure items. On the other hand, suppose that the deficit were to be created by, say, an increase in expenditure on highway construction. Not only must this decision represent a commitment to create a deficit, but also a commitment that more highways are needed relative to all of the other public goods and services that could have been expanded instead.

If the tax reduction method of creating a deficit is to be adopted, the effects will, of course, depend significantly on the manner in which

[1]This lag can, however, be easily exaggerated. For fiscal policy purposes, the relevant lag is that between the decision to increase the spending rate and the impact on the economy. This will normally be less than the lag between the decision to undertake a project and the reported increase in government spending. Incomes in the economy will increase as private firms respond to contracts. On these points, see Murray L. Weidenbaum, *Government Spending: Process and Measurement* (Boeing Aircraft Company, 1958)

taxes are to be reduced. A cut in the personal income tax, the primary revenue producer for the federal government, concentrated in the lower-income brackets would stimulate private consumption spending. For example, an increase in personal exemptions would have this effect. An across-the-board reduction in income tax rates would stimulate private consumption spending, but it would also exercise some influence on investment outlay. A reduction in the corporation income tax would tend to stimulate investment spending primarily.

More important than the manner of tax reduction, however, is the expected permanence of the rate change. If the tax change is permanent, or expected to be, the effects on spending are clearly greater than those which would result from a similar tax reduction expected to be temporary. This particular issue was much discussed in early 1958 when tax reduction was widely proposed as a means of stimulating recovery from the short but severe 1957–58 business recession. Few students of the problem expected the recession to be either overly severe or long lasting. For this reason many advocates appeared for temporary tax relief. Most of the proposals took the form of temporary reductions in income tax rates, with previous high rates to return to force automatically after a specified time span. These proposals were supported because of the widely acknowledged difficulty of getting tax increases readopted once reductions have been voted by the Congress. These proposals for temporary tax relief were sharply criticized on the grounds that spending would not be significantly stimulated. Individuals, knowing the tax relief to be a temporary windfall, might treat the added income as an addition to capital and save a good portion of it. This argument stated further that if a tax reduction were to be made at all, it should be a permanent one, at least in the sense that a reversal should require new legislative action. Neither proposal was adopted, and the economy weathered the 1957–58 recession without positive fiscal action on the tax side having been taken. But the debates of early 1958 do point to the importance of the nature of tax reductions contemplated.

The reaction to the 1957–58 recession may also be helpful in illustrating the difficulties of creating deficits by the expenditure-increase method. Several public expenditure programs were expanded at least partly on the grounds that recovery from the recession would thereby be stimulated. By the fall of 1958, however, the economy, both of its own momentum and as a result of monetary policy, showed definite signs of recovery. And the big bulge in federal government spending had not yet taken place. Fiscal 1959 experienced a deficit

of more than $12 billion, but instead of having the desirable effect of stimulating recovery, much of this spending had the undesirable effect of promoting inflation because of the lag of actual expenditure behind initial authorization.

FINANCING A BUDGET DEFICIT

A budget deficit, regardless of the method by which it is created, must be financed. The effects of the whole operation may be influenced more by the means of financing than by the means of creating the deficit. A deficit implies a rate of public outlay in excess of tax receipts. The difference must be made up by funds, purchasing power, secured from some source other than taxes. There are two basic ways of securing such funds: borrowing and creating money. As the following discussion will indicate, these two separate ways have not been carefully distinguished.

Borrowing from the "Public"

If a governmental unit decides to finance a deficit by borrowing from the "public," that is, from individuals and nonfinancial institutions, it will offer government securities in exchange for current purchasing power, currency or deposit claims. The operation will withdraw current purchasing power from the private economy, purchasing power which might otherwise have been used to purchase private securities or consumer goods and services. Only if the funds should be drawn from private hoards would there be no reduction in private spending. In the sense that the financing side does withdraw purchasing power from the private sector, government borrowing from the "public" resembles taxation. The public expenditure of the funds will return fully the withdrawn monetary resources to the spending-income flow, but the net effect upon the size of the money income flow is not likely to be great except where a good portion of the borrowed funds come from idle private hoards. Some expansionary effect is predictable as a result of budget deficits financed by borrowing from the "public," but in many cases this effect will be small, and, under some conditions, negligible.

This analysis indicates that deficits should be financed by borrowing from the "public" only when it seems desirable to limit sharply the expansionary effects. This financing method is, therefore, appropriate when deficits are created for other than economic stabilization purposes, for example, during war periods when the political pressures are such that adequate taxation cannot be achieved.

Borrowing from Commercial Banks

The full expansionary effects of budget deficits take place only when the funds are secured in such a manner that private purchasing power is not significantly reduced. When commercial banks have excess reserves and utilize these reserves to purchase government securities, this is more or less the case. The government's borrowing of these otherwise idle funds allows them to flow (through the public spending process) into the spending stream. An important secondary effect of this operation is that exerted on the supply of money in the system. The utilization of the otherwise excess and idle commercial bank reserves to finance deficits will allow an expansion of the total stock of currency and bank deposits to some multiple of the initial amount "borrowed" by the government. Since, however, banks possess excess reserves prior to the borrowing operation, there is no assurance that the deposit multiplier effects will be influential in encouraging further expansion in money income. The financing of a deficit in this manner takes on characteristics of the second method mentioned, money creation, rather than genuine borrowing.

If, however, the government attempts to sell securities to commercial banks when reserves are not in excess, the borrowing operation itself must be restrictive. Banks must, in this case, use funds to purchase government securities which would otherwise remain invested in private earning assets. The demand for private "bonds" is reduced; prices are pulled down, and interest rates up. The expansionary effects of the public spending side are offset, to a considerable extent, by the reduction in private investment spending caused by the tightening up of funds available for private securities.

"Borrowing" from Federal Reserve Banks

The "sale" of government securities to the Federal Reserve banks in order to finance a budget deficit should not really be included under the term government "borrowing." This form of financing is the modern institutional equivalent of the second method mentioned, money creation. To call this operation "borrowing" tends to confuse the useful distinction that can be made between genuine borrowing, through which purchasing power is actually transferred *to* government and *away* from other uses in exchange for an interest return, and money creation, which involves a net addition to total purchasing power. As the preceding section indicated, the sale of government securities to the commercial banks can represent a genuine

borrowing operation if funds are withdrawn from alternative bank investments. No differential addition to the total money supply need take place. On the other hand, if excessive reserves are present, the sale of securities to commercial banks also generates net money creation.

The sale of government debt instruments to the Federal Reserve banks, coupled with the expenditure of the funds, not only adds to the spending flow in the economy without offsetting effects on the financing side, the combined operation also increases the stock of money in the system, generating possible multiplier effect of quite another sort. It will be useful to explain the mechanics of this operation in some detail.

A Treasury Department sale of government securities (Treasury bills, notes, certificates, or bonds) to a Federal Reserve bank will involve the bank's creating a Treasury deposit account among its liabilities along with the addition of the security item among its assets. As the government spends the funds in purchasing goods and services in the private economy, checks are drawn by the Treasury on its newly created account at the Federal Reserve bank. These checks are received as payments by individuals and firms who sell goods and services to the government. Normally, these checks will be deposited in commercial banks throughout the economy. Commercial banks will, upon receiving these, credit the deposit account of individuals and firms. Banks will, in turn, send the checks along to the Federal Reserve bank. Since the Treasury checks constitute a net claim against an account held in the Federal Reserve bank, the commercial member bank finds its own reserve account at the Federal Reserve increased by the full amount of the checks. Not only will the commercial banks find themselves with sufficient added reserves to cover fully the legal requirements behind the newly added deposits of the initial recipients of the Treasury checks, the banks find that the operation has provided them with excess reserves which will allow them to expand bank loans and deposits still more. The degree of potential expansion made possible will depend on the legally required reserve ratio. It is not appropriate at this point to discuss fully the mechanics of the deposit multiplier in a fractional reserve banking system such as that of the United States. It is sufficient to indicate that, in addition to the full expansionary effects of the deficit as explained through the investment or income multiplier, a different possible multiplier effect exists through the increase in the supply of money. "Borrowing" from the Federal Reserve bank is precisely

equivalent in this respect to the printing of fresh new currency to meet government expenditures in excess of tax revenues.

In the twentieth century, Western governments are not likely to resort to the more crude method of deliberate currency creation when the same results may be accomplished by "borrowing" from central banks. Insofar as this latter operation serves to conceal from the public and responsible policy makers the real nature of the transaction, the alleged advantages are illusory for society as a whole. Effective control can be achieved only as a result of adequate knowledge, and this control becomes especially important when it is recognized that a great deal of discretion must be lodged with administrative authorities in the management of an outstanding national debt. Many of these points will be discussed more fully in the part of this book dealing with the national debt. But insofar as the public is fully cognizant of the fact that "borrowing" from central banks is really money creation, the method of financing a deficit is legitimate. It becomes the most appropriate method when the maximum expansionary effects of the deficit are desired, for example, at the bottom of a deep depression. The method of financing is wholly inappropriate when the deficits are created for reasons other than those of economic stabilization.

FEDERAL DEFICITS AND STATE-LOCAL DEFICITS

In this chapter federal government deficits were assumed to be the subject of analysis. Actually, the same effects will result from deficit financing by state and local units of government. Provided the source of the funds is equivalent in the two cases, a federal deficit of, say, $1 billion will generate similar effects to a state or local government deficit of like amount. Such differences as exist are practical ones. Normally, state and local governments sell securities to private individuals and to business firms; that is, these governmental units borrow from the "public." Hence, the financing of state-local deficits will be somewhat more restrictive than that of federal government deficits, which are, more usually, at least in part, financed through the sale of securities to the banking system. If, however, the Federal Reserve System should choose, it could purchase state-local debt issues; in this case, the "borrowing" would really take on the aspects of money creation outlined for federal government "borrowing," and the effects would be identical.

CONCLUSIONS

This chapter has analyzed the effects of deficit financing. We have avoided the question of the desirability of deficit financing and related issues. These will occupy us later. We have distinguished between the creation of deficits and financing them. Deficits created by expenditure expansion were shown to be more expansionary than like deficits created by tax reduction under restricted conditions. However, the introduction of practical considerations of timing shifts the advantage to the tax method in any purposeful use of deficit creation to achieve economic stabilization.

The financing of a deficit can be as important as the means of creating it in determining its effect. The maximum expansionary effects are achieved through a sale of securities to Federal Reserve banks. Not only does this method of financing leave private purchasing power undisturbed; it also causes a net addition to the total money stock, an addition which can be a multiple of the initial size of the deficit. This addition to the money stock can, itself, generate further expansionary effects on money income.

Where excess reserves are present, the securing of funds from commercial banks has a similar effect. Either of these methods is essentially equivalent to money creation.

If, on the other hand, it should prove desirable to finance the deficit in the least expansionary manner, the funds should be secured through the sale of government securities to the "public." Securities sold should be exchanged for current purchasing power which will be withdrawn from the spending stream.

Chapter 9 THE ECONOMICS OF UNBALANCED BUDGETS II: SURPLUS FINANCING

Budgets may be unbalanced in a different direction from that discussed in Chapter 8. Tax revenues may be greater than public expenditures during the specified accounting period, say, a fiscal year. This sort of unbalance is called *surplus financing*, and its effects will be analyzed in this chapter. Much of the analysis is similar, in reverse, to that of deficit financing. For this reason, the discussion can be quite brief.

WAYS OF CREATING A SURPLUS

A surplus can be created in any one of four ways. Tax revenues may increase with the rate of public outlay remaining constant; tax revenues may remain stable while public spending falls; both revenues and expenditures may fall with the latter falling more; both may increase with the tax intake increasing by a larger amount. As in the analysis of deficits, we shall discuss in detail only two of these, the tax increase and the expenditure reduction method.

Expenditure Reduction

If taxes are maintained so as to yield a stable revenue and expenditures are reduced, the rate of total spending in the economy, public and private, will be directly reduced. If we leave secondary repercussions on individual and business behavior out of account, this direct reduction in spending will tend to reduce national money income. The surplus must be contractionary in effect.

If we further assume that the surplus funds acquired by government are not returned to the spending flow, the contraction in national money income will eventually amount to some multiple of the surplus. The multiplier works negatively as well as positively, and the

analysis of budget surpluses is a useful illustration of this point. If the surplus is a single once-and-for-all affair, national money income will fall by the amount of the surplus in the first spending period following its creation, but, in later periods, income will gradually rise to the previously established equilibrium level. However, if the surplus represents a change in the *rate* of spending that is expected to continue over an indefinite number of income-spending periods, national money income will move gradually downward to a new and lower equilibrium level. At this point, income will be lower than its previous equilibrium by some multiple of the change in the spending rate. The extent of the difference will depend on the marginal propensity to save.

If substantially full employment of resources is present in the economy and excessive monetary demand threatens to cause inflation, the effects of surplus creation may serve only to prevent the inflation. No net reduction in real national income need occur as a result of the surplus. On the other hand, if monetary demand is not excessive, the surplus creation may, through the reduction in money income, generate some reduction in real income and employment. This result is especially likely to follow when wages and prices are rigid against downward shifts in aggregate demand. Under such circumstances, any reduction in the size of the money income flow may cause some accompanying reduction in real income.

Tax Increase

If public spending is maintained at a constant rate and tax revenues are increased, the effect on the economy must be contractionary. But, for a surplus of like size, and under the same set of assumptions regarding secondary reactions, the reduction in money income will be less than in the expenditure decrease case. The reasoning here is identical with that discussed as concerning deficit creation. Some portion of the increase in tax funds would have otherwise been saved, not spent, by private individuals and firms. For this portion, the tax increase does not *directly* reduce the rate of total spending in the economy. The multiplier effect applies only to that share of the tax increment which does, in fact, represent a direct withdrawal from the spending flow.

PRACTICAL CONSIDERATIONS

Deliberate public action to create budget surpluses will rarely be undertaken by legislative bodies in democratically organized

societies. Excessive monetary demand will likely be restrained, if at all, by restrictive monetary policy, not fiscal policy.

Nevertheless, budget surpluses will be created from time to time, but more or less unintentionally. Budget surpluses seem more likely to result from unanticipated increases in tax revenues, our second method discussed, than from unanticipated cuts in government spending. The American economy, in the years since World War II, has been characterized by rather persistent inflationary pressure, broken only by the mild recessions of 1949 and 1953 and the more severe recession of 1957–58. During periods of inflation in incomes and prices, the tax structure, as organized in the United States, tends to produce ever-increasing revenues. And the increase in revenues tends to be more than proportionate to the increase in aggregate incomes. This is due to the importance of the progressive income tax in the structure. As incomes are increased due to inflation, the average rate of tax increases because the average income level becomes higher. Also, the importance of the corporation income tax reinforces this effect. During periods of inflation, corporate profits move up rapidly, more rapidly than the average income level. Tax revenues are increased during inflationary periods, and unless public expenditures expand to keep pace, a budget surplus appears. As our analysis has shown, the effects of the surplus must be contractionary. But the contraction caused by a surplus which is itself created by inflation can never be sufficient to offset fully the inflationary expansion which generates the surplus in the first place.

DISPOSING OF SURPLUS FUNDS

Deficits must be financed; surpluses must be disposed. When a surplus is created, government takes in more funds than it spends. The effects of the surplus creation may be offset by the manner of this disposal.

Quite clearly, the maximum contraction in income is achieved when the budget surplus is created and the excess funds are literally "burned up" or "neutralized." This operation can be practicably accomplished in either one of two ways in the modern economy. The Treasury Department can employ the surplus funds to add to its cash balances. This will effectively prevent these funds from returning to the spending stream. This method of disposition, while certainly appropriate, is useful only within rather narrow limits. Sizable build-ups in Treasury balances may be allowed to take place, but important accumulations of unspent balances will encourage both

legislative bodies and executive budget makers to reduce the rate of taxation or to increase the rate of public spending. In either case, the disposition of the surplus in this way might eliminate the cause of the surplus in the first place.

The second, and more efficient way, of disposing of large budget surpluses is to use the funds to retire government debt instruments held by the central banks, in this country the Federal Reserve banks. Just as borrowing from the Federal Reserve banks is the modern institutional means of creating money, so the retirement of debt held by these banks is the modern way of effectively destroying money in the system. The mechanics of this process is the reverse of that discussed in the deficit case. As the tax payments are made, individuals draw upon current deposit accounts in the commercial banks. Treasury transfers of these claims to the Federal Reserve banks cause member commercial banks to lose reserves. Thus, a contraction in the money supply is generated quite apart from the direct contraction in income. This potential monetary contraction will depend on the legal reserve ratio.

Utilization of the surplus to retire government debt instruments held in the portfolios of the commercial banks tends to lessen the contractionary effect of the combined taxing–surplus disposal operation. The payment of taxes by individuals will draw down deposit accounts in the commercial banks. As the government transfers these claims against the commercial banks to its own deposit account at the Federal Reserve banks, commercial bank reserves are reduced. But this is only half of the story. If the surplus is then used to retire debt held by the commercial banks, the government will draw down its deposit accounts at the Federal Reserve banks, exchanging Treasury checks for maturing bank-held securities. This half of the operation increases commercial bank reserves by an amount equivalent to the reduction in reserves generated by the tax withdrawal. Commercial bank reserves are, therefore, unchanged. But commercial bank deposit liabilities are reduced; hence, some portion of the previously required reserves are now excess. This creation of excess reserves allows some multiple expansion of bank loans and deposits. Actually, in a period of expansion when the demand for loanable funds is high, deposits can potentially expand to the level which prevailed prior to the budgetary operation. The surplus creation coupled with the retirement of commercial-bank-held government securities may not exert any downward pressure on the level of money income except insofar as altered liquidity positions of commercial banks

affect their demands for cash. In periods of depression, when excess reserves are already present in the banking system, the retirement of commercial-bank-held government debt will not exert an expansionary effect of the same force. Excess reserves will be created, but these will merely be added to those already existing. The combined operation will, in this case, be contractionary. But contraction is not needed in such periods, and the surplus disposal problem is much more likely to occur during periods when the retirement of bank-held debt will be expansionary.

If funds secured from an excess of tax revenues over public spending should be employed in retiring government debt held by individuals and nonfinancial institutions, this combined operation will not exert significant contractionary effects on the economy except under certain very limited conditions. As the government returns the tax revenues to the public in exchange for maturing securities, a portion of these funds will return directly to the spending stream, either for consumption goods or for private securities. Only if public holders of government securities should hoard a larger portion of the receipts from maturing government debt repayments than taxpayers do would the result be contractionary. The operation will, however, tend to change the pattern of spending. For example, the marginal or additional taxation required to generate the surplus may exert its primary effect on consumption spending. On the other hand, these funds, when returned to bondholders, may be put to work primarily in purchasing private securities, thereby accelerating investment spending.

In the discussion of the government debt later in this book, we shall consider many of the points raised briefly here. However, it is useful to note that the creation of a budget surplus with the funds devoted to retiring public debt need not be restrictive in effect. Only if the funds are used to build up Treasury balances or to retire debt held by Federal Reserve banks can effective disposal of purposefully created surpluses be accomplished. Only if surpluses should be created quite apart from stabilization needs should the funds be used to retire debt held by the commercial banks or by the "public."

CONCLUSION

The analysis of surplus financing is similar in reverse to that of deficit financing. The reduction of expenditure will tend to exert more restrictive effects than will an increase in tax revenues of like amount. But just as with deficits, the manner of disposing of the sur-

plus revenues can fully offset the initial effects of surplus creation. Only if the revenues are genuinely neutralized can the full contractionary effects take place.

Political reality suggests that democratically organized governments will rarely create budget surpluses from deliberate intent. Fiscal policy seems, on this count, to have a built-in bias toward deficit financing. Nevertheless, surpluses are likely to be created more or less unintentionally due to the uncertainty as to revenue yields and to the spending rates. This seems especially likely during periods of inflation in incomes and prices. The progressive tax structure will generate ever-increasing tax yields at higher incomes. But the surpluses created in this way cannot possibly exert sufficient restrictive influence to curb the very inflation which is their cause. This makes it all the more important that the surpluses arising from this source should be disposed of in such a way that the revenues are not returned to the spending stream.

Chapter 10 NORMS FOR FISCAL POLICY

The three preceding chapters have analyzed the effects of government budgets on the macroeconomic variables, income, employment, and prices. The question of the appropriateness of using the budget deliberately to influence one or all of these variables has been neglected. This chapter is devoted to a consideration of this question.

CRITERIA FOR STABILIZATION POLICY

Three separate but closely related questions need to be discussed. First, what constitutes a "desirable" state of economic affairs as measured in terms of income, employment, and prices? Second, how may this "desirable" state of affairs be represented in terms of criteria which are useful as guides to policy? Third, should the budget be used in the execution of this policy?

A description of the most desirable or satisfactory economic situation seems relatively simple and straightforward. National real income should be as large as is possible consistent with the maintenance of free institutions and consistent also with a generally acceptable rate of economic growth and development. Leaving aside the several ambiguities immediately introduced by this statement, it suggests that all resources made available for employment at market-determined prices should be employed and that production should be reasonably efficient. The statement also suggests that the purchasing power of money should be reasonably stable.

The second question is a much more difficult one. How may the attributes of this desirable state of economic affairs be represented in criteria useful for stabilization policy? The two subsidiary aspects of the foregoing description can take on some quantitative sig-

nificance. The degree of employment can be measured, especially in reference to the labor force, the economy's most important resource. The stability or instability in the purchasing power of money can also be observed with a relatively high degree of accuracy. It would seem to follow, therefore, that full employment and price level stability should constitute the joint aim of any responsible stabilization policy, and, further, that these provide definite and measurable criteria for policy planning.

Full employment and price level stability may, however, conflict sharply. And here is presented the major dilemma of stabilization policy since World War II. Direct government action to achieve full employment, especially of the labor force, may cause inflation. On the other hand, government action to stabilize the price level may not produce satisfactory full employment.

Why may these two goals of policy, each seemingly desirable in itself, conflict when used as criteria for stabilization policy? If, when unemployment is present, newly added purchasing power served merely to employ otherwise idle resources, real income and employment would be increased but the level of prices would not be pushed upward. Similarly, if, during periods of threatened or actual inflation, purchasing power could be withdrawn only from those sectors of the economy characterized by excessive monetary demand, no reduction in real income and employment need accompany action aimed at stabilizing product price levels. But the facts may be such that neither of these processes can take place. The economy, as it exists, may not be characterized by sufficient flexibility in prices, both for resource services and for final products, to allow genuinely "full" employment to be achieved along with monetary stability.

If wages are rigid against downward shifts, and if institutional factors (such as monopoly, cartel agreements, and government regulations) force these up more rapidly than the general growth rate of the economy warrants, one of two things must happen. Prices must be allowed to move upward also, thereby defeating the goal of monetary stability, or, alternatively, some unemployment beyond that considered as the minimum acceptable must be allowed to occur. Governmental action to impose monetary restriction in order to prevent inflation may produce a degree of unemployment considered undesirable by many people. On the other hand, government action to increase purchasing power sufficiently to stimulate reasonably full employment may allow inflation to occur. Government policy which

tries to incorporate both goals simultaneously may be doomed to failure.

Ideally, of course, the proper course of governmental action would be that of removing or reducing significantly the strength of the institutional barriers to wage and price flexibility. If the monopoly power of both labor organizations and large business enterprises were reduced, the joint goals of price level stability and full employment would be more compatible. But stabilization policy must be made continuously, and a decision on criteria cannot wait until the economy is rid of all restrictions. Finally, the choice reduces to the following: Shall full employment or monetary stability be adopted as the overriding criterion for stabilization policy?

The experience of the Great Depression of the 1930's emphasized the gross inefficiency as well as the widespread suffering caused by large-scale unemployment. This experience was, to a certain extent, "explained" by the economic theories of Lord Keynes, and the implications of these theories appeared to be that almost all of the economic ills could be cured by a forthright "full employment" policy. The responsibility for insuring employment stability was assumed by national governments throughout the Western world in one form or another. This thinking was embodied in the so-called "Full Employment Act" which was passed by the United States Congress in 1946. This act, which also created the President's Council of Economic Advisers, stated that governmental policy should be aimed at achieving a maximum of production, employment, and purchasing power. But the act did not contain specific directions as to how such goals might be accomplished. Nevertheless, it can be said, at least in one sense, that the United States has been committed to a "full employment" policy since 1946.

But how is "full employment" to be defined? Clearly, the large-scale unemployment of the 1930's was excessive, and a repetition is to be prevented under any circumstances. But what percentage of the total labor force must be gainfully employed for a situation to be classified as one of "full employment"? Must the temporary wartime additions to the labor force be included? Or does "full employment" mean only that the unemployment rate be less than 5 per cent? Or 10 per cent? No satisfactory answer has been given, and, indeed, none can be given, to these questions.

Institutional conditions will affect the degree of unemployment significantly. Under conditions of price flexibility and effective re-

source mobility, the degree of unemployment might be quite small, reflecting only the necessary frictional turnover of men between jobs. At the other extreme, if wages and prices are extremely sticky and institutional barriers stand in the way of resource movement, the unemployment rate may have to be quite high if monetary stability is to be maintained. Any attempts to push the employment rate upward beyond this level might result in serious inflation.

Many economists and policy makers now argue, quite openly, for an abandonment of the goal of monetary stability. They accept the view that, in the modern economy, price level stability is not compatible with a sufficiently high degree of employment. Faced with the criterion dilemma, they are willing to recommend discarding the price level stability goal in favor of the employment one. There is much to recommend this position provided that one could be assured that only a "fair" or "reasonably mild" degree of inflation would ensue from its adoption. If, as some maintain, a satisfactory level of employment can be maintained if only a 3 or a 5 per cent annual increase in the price level is allowed to occur, the game might be worth the candle. But this guarantee cannot be accepted on faith, and, upon closer examination, the search for a "full employment" goal independently seems a will-o'-the-wisp.

Precisely the same set of problems would arise with a stable annual increase of, say, 5 per cent in the price level as now arise with a stable price level. Once contracts become adjusted to the steadily declining purchasing power of money, the same institutional forces which now generate an unacceptable level of unemployment at stable prices will generate an unacceptable level of unemployment at constantly rising prices. Disregard for the goal of monetary stability coupled with exclusive concentration on the goal of "full employment" must lead to an ever-increasing rate of inflation if institutional factors are present to push costs up more rapidly than productivity increases warrant. For this reason, the only answer to the criterion dilemma seems a forthright acceptance of the monetary stability goal.

This does not suggest that full employment is not the more desirable, or that unemployment should be tolerated. Monetary stability should be fully consistent with satisfactory full employment if monopoly restrictions on wages and prices are removed. If a high degree of unemployment persists under rigorous adherence to a policy of price level stabilization, the government should take action to

remove these monopoly barriers which cause this to happen. But it should be emphasized that the unemployment is due to the monopoly restraints, not to a perverse policy on the part of government.

The explicit acceptance of price level stability as the overriding criterion for stabilization policy would seem to do much toward creating an atmosphere within which institutional improvements would be expected to take place. Currently, there is no stated policy; lip service is given both "full employment" and "monetary stability." Since these two tend to conflict, governmental policy is continuously being subjected to the criticism that overly restrictive monetary fiscal measures are creating too much unemployment or else that overly lax measures are allowing inflation to occur. As a result, government authorities are being constantly bombarded with conflicting pressures which can be removed only by some firm criterion's being explicitly stated. Perhaps this step is too much to hope for at this stage of economic development; political realities may prevent clear policy guides from ever being set up. In this case, we shall continue to live in what some students call the worst of both possible worlds. But as students of these problems, we should, I think, refuse to admit that clearly defined criteria cannot be laid down. Our discussion should proceed as if our collective decision-making process can effectively formulate satisfactory rules for stabilization policy.[1]

MONETARY POLICY AND FISCAL POLICY

The second question posed initially has now been answered, although in a manner which will be accepted by only a portion of the "experts." Conflicts of this sort must arise when we depart from pure analysis and discuss norms. The case for monetary stability has been stated as the appropriate criterion for stabilization policy. The third question remains: To what extent should the government budget be used in the execution of this policy?

The answer to this question depends to an important degree on the role envisaged for monetary policy. To the extent that monetary policy can accomplish the desired stabilization of the economy, the

[1]Some of the issues discussed in this section of Chapter 10 are highly controversial. This is to be expected in all cases where policy norms are considered. Competent scholars may agree on the positive analysis while differing sharply on norms for collective action. The discussion reflects my own reasoned conclusions on the full employment–price stability problem, and these conclusions must rest, to some extent, on value judgments. My responsibility in presenting this material is, I think, fulfilled when I state that competent economists and scholars disagree with certain of these conclusions. Since I do not share the opposing views, any attempt on my part to present them would seem to be unwise.

scope for purposeful usage of the government budget in this direction is reduced. Fully successful monetary policy requires no fiscal policy; fiscal neutrality, at least as regards stabilization objectives, would be the appropriate norm.

Before discussion of the relationship between monetary policy and fiscal policy, one point should be made. The policy instruments are relatively independent of the policy criteria. It was argued that the more suitable criterion for stabilization policy is the maintenance of the value of the monetary unit. But this should not suggest that monetary *policy* is necessarily the more appropriate means of attaining this goal. On the other hand, the acceptance of full employment as the policy criterion need not imply budgetary or fiscal action rather than monetary action. In much discussion, the problem of defining criteria has not been separated carefully from the problem of selecting the most efficient stabilization instruments. The "full employment" criterion has, in many cases, been tied too closely to fiscal policy instruments and the monetary criterion tied too closely to monetary policy. Actually, monetary policy may be the more efficient instrument in reaching either goal. Or the same may be said for fiscal policy. This question remains yet to be discussed.

Monetary policy is defined as action taken by the Treasury Department or the central bank (Federal Reserve Board) on the quantity of money, its rate of turnover, or the quantity and utilization of close substitutes for money (near-monies). Detailed analysis of the various ways in which monetary policy may be implemented is not necessary here. Through such devices as changes in the legal reserve ratio for commercial banks, shifts in the rate at which commercial banks may borrow from the Federal Reserve banks (the rediscount rate), and purchases or sales in the open markets for government securities, the Federal Reserve Board (the monetary authority in the United States) can expand or contract the supply of money and credit available in the economy. Of course, in this way, the rate of private spending on goods and services can be indirectly affected. A restrictive or "tight" money policy which limits the rate of increase in the quantity of money, and which makes the use of credit expensive through increased interest costs, can sharply curb a threat of inflation in the price level. On the other hand, an "easy" money policy, one which allows credit to be expanded at low cost, can significantly increase the rate of private spending.

The claim is often made that monetary policy is a more efficient anti-inflation than antideflation weapon. The reasoning here is that

sufficiently high interest rates must restrict credit expansion and spending, but that an interest rate floor may exist to prevent similar effects on the downswing of the business cycle. There is a certain validity in this charge of asymmetry in the effectiveness of monetary policy. Given the presence of a deep and prolonged depression, the availability of expanded credit facilities at low cost may not be sufficient in itself to overcome deep-seated fears of continued unemployment. For other than serious long-run depressions (and many independent reasons exist why these should not recur), monetary policy may be able, if vigorously executed, to achieve the job of stabilization on both sides of the cycle. Experience gained in the years since World War II indicates that monetary restrictions can choke off threatened inflation and monetary ease can reverse a downswing in economic activity.

From this it does not follow that monetary policy is necessarily the most desirable or most efficient stabilization weapon. Administratively, monetary policy, as currently organized, possesses many advantages over fiscal policy. Monetary policy is in the hands of the Federal Reserve Board, as coordinated with the Treasury Department. Congressional approval is not required for changes in policy. Hence, as compared with fiscal policy, monetary policy is characterized by greater freedom of movement, greater flexibility. This allows a considerably more rapid response to economic changes as they might appear. An example of the contrast may be drawn from the experience in the fall of 1958. In early 1958, the economy was in the midst of the short, but severe, 1957–58 recession. Congress responded to the event by authorizing sharply expanded spending programs along several lines. By late 1958, however, the economy had substantially recovered; monetary policy was switched from that of active ease to restriction. But the impact of the fiscal policy, the expansion in federal spending, did not take place until late 1958 and early 1959. On administrative grounds, there is little doubt but that monetary policy is the more efficient stabilization instrument.

Administrative efficiency is not the only criterion which should be considered. The manner in which monetary policy either reduces or expands private spending may differ significantly from the manner in which fiscal policy accomplishes the same over-all purposes. Before intelligent comparisons can be made, more detailed consideration must be given to what may be called the composition of effects.

An attempt to encourage spending by budgetary deficits will normally increase spending for consumption goods and services more

than for private investment goods. This is notably true if the deficit is created by tax reduction instead of an increase in public spending. On the other hand, a policy of "easy" money, designed to accomplish the same over-all effect on aggregate outlay in the economy, will tend to encourage investment spending more than consumption. Low interest rates and attractive credit terms tend to encourage spending on capital rather than consumption items.

On the other side, a "tight" money policy tends to restrict investment spending, whereas a restrictive fiscal policy, surplus creation, may affect consumption primarily. These differences in the directional or sectoral impact of monetary policy and fiscal policy should not be exaggerated. Reduced taxation will also allow expanded investment spending, and increased taxation will restrict investment outlay sharply in some cases. On the other hand, a reduction in interest rates may, under certain conditions, cause an expansion in consumption spending. But economists seem to agree that the differences in directional effect do exist.

Given these differences, the choice between monetary policy and fiscal policy as stabilization instruments may depend, to some degree, on the importance that the society attaches to expanded economic growth relative to expanded current consumption. Insofar as consumption spending tends to be more stable over time, there is something to be said for allowing monetary policy a primary role. If investment is genuinely the causal factor in the cyclical swings, with investment booms generating the upswings and investment slumps the downswings, a stabilization policy aimed at choking off investment spending on the upswing and stimulating investment in the downswing has much to recommend it. This would place the major burden of stabilization on monetary policy and would leave to fiscal policy a rather passive role except during possible periods of severe inflation or depression. However, if society is desirous of achieving a more rapid rate of economic growth for its own sake, a policy of continual monetary ease, with fiscal policy assigned the important stabilization task, is suggested.

Quite apart from the issue of comparative efficiency, fiscal policy is more suitable than monetary policy as a stabilization instrument on purely ethical grounds. Monetary policy restricts a boom by "bribing" holders of funds to part with them. Fiscal policy directly levies additional tax payments on the holders of excessive spending power. Thus, a restrictive monetary policy, at least in part, puts off the burden of stabilization to future periods, whereas fiscal policy causes

the burden to be currently shouldered. Contrariwise for the down side, monetary policy is differentially beneficial to taxpayers in future periods. Expansionary fiscal policy benefits taxpayers during the period when action is taken.

On balance, the relative desirability of fiscal policy and monetary policy will depend on the particular goals of the social group, the particular form of the decision-making institutions, and a host of other factors. The greater administrative efficiency of monetary policy in the current setting probably means that, in the near future, it will continue to be used to a greater extent than fiscal policy. The latter does seem to be biased toward deficit financing due to the structure of legislative decision making. Hence we can probably expect fiscal policy to be employed as a complement to monetary policy in preventing threatened slumps, but not in preventing threatened inflations. Given these facts, the appropriate rules for fiscal policy remain to be laid down. The next chapter will be addressed to this point.

Chapter 11 RULES FOR FISCAL POLICY

We shall discuss here three separate rules for fiscal policy, three alternative schemes of budgetary adjustment in response to changes in the level of economic activity as measured in the macroeconomic variables, income, employment, and prices.

THE BALANCED BUDGET RULE

Prior to the Great Depression of the 1930's, the only accepted rule for fiscal policy was that the government budget should not be adjusted in response to changes in the level of economic activity. The budget should be made on the basis of the principle of maintaining balance in the accounts over the appropriate accounting period, normally accepted as the fiscal year. Governments were almost universally condemned as irresponsible if expenditures exceeded tax revenues except for accidental reasons. That is to say, deficits were not purposely allowed to occur in normal periods. Deficit financing was admitted to be unavoidable during times of war, but in nonwar periods governments were careful to preserve financial integrity, a term which was held to be almost synonymous with the annually balanced budget. Surplus financing was accepted only as a means of accumulating revenues with which outstanding issues of the government debt could be retired. Explicit accumulation of surpluses with a view toward preventing inflation was not considered.

Since strict adherence to the principle of the annually balanced budget means that fiscal policy is not to be employed directly for stabilization purposes, the implication of this view is that the primary burden of maintaining stability must rest with either the monetary authority or upon the self-correcting forces in the economy itself. Monetary policy, conceived as a deliberately employed means

of maintaining stability, has been long accepted, especially in the form of manipulation of central bank rates. Nevertheless, the weight given to the self-correcting forces in the economy was of major importance before the Great Depression. Automatic or quasi-automatic adjusting devices were expected to come into play and to prevent severe depressions or severe inflations. To a limited extent, these automatic self-adjusting forces did operate so long as most of the countries of the world were on the international gold standard. But once the international monetary standard was abandoned, nationally managed currencies combined with fractional reserve banking systems prevented any really effective operation of self-correcting forces in the economy.

The economic theories of Lord Keynes, themselves born in the Great Depression, were of great influence in emphasizing the absence of satisfactory self-correcting mechanisms in the economy, and the necessity for positive governmental action to achieve desired levels of income and employment. Until this influence made itself felt, the standard feature of fiscal orthodoxy was the annually balanced budget. When Franklin D. Roosevelt came into office in 1933, one of his main aims was a return to fiscal responsibility. The last year of the Hoover administration had seen deficits occur due to the reduced tax yields and the expanded emergency spending programs. The new administration was determined to restore annual budget balance, a goal which the Roosevelt administration continued to pursue throughout its first term. The Keynesian analysis appeared in 1936, and included in it were the implications that expanded government expenditure might be necessary if satisfactory levels of income and employment were to be attained. As a result of these ideas, and for other reasons, deliberate unbalancing of the federal budget for stabilization purposes was first introduced in response to the secondary recession of 1937.

Once it was widely recognized that the federal budget might be purposefully unbalanced to achieve desired levels of income and employment, economists tended to abandon the balanced budget principle on the grounds that it is overly restrictive. It was widely accepted that the maintenance of full employment is more important than any strict adherence to an ancient fiscal rule; therefore, if necessary, the government budget should be deliberately unbalanced as necessary. *Fiscal policy*, as such, was introduced into both discussion and action.

In suggesting the abandonment of the principle of the annually balanced budget, economists generally seem to have overlooked the important function which the rule does play in the complex process of fiscal decision making. Economists, on the average, seem to have paid perhaps too much attention to the stabilization problem relative to other equally important aspects of budgetary and fiscal institutions.

The balanced budget rule serves a control function. Taxing and spending decisions are made by legislative bodies. And, representative government being as it is, the legislator, regardless of his personal integrity, is constantly under pressure from two opposing forces. Constituents want lower taxes, and they rarely make the connection between taxes and specific public services. At the same time, voters want tax reductions and federal expenditure projects (veterans' hospitals, Air Force installations, river basin developments, and so on) in their local areas. Unless some central control feature exists to keep these two opposing forces in rough equality with each other, the limited rationality that seems to be present in legislative decisions will be still further reduced. Only the balanced budget rule tends to provide such a control feature. It was, and continues to be, largely respect for this fiscal principle, considered to be out of date by many analysts, which has kept public spending and tax revenues in rough correspondence with each other in the postwar period.

It is easy to see that abandonment of the faith in the balanced budget principle tends to bias decision making in the direction of deficit financing. Legislators will rarely create surpluses since the tax cutters and the expenditure expanders are the pressure groups, not the tax increasers and the expenditure cutters. Therefore, insofar as post-Keynesian attitudes are allowed to exert influences on legislators, federal budgets will tend to show more unbalance on the deficit side than on the surplus side.

Does this suggest that the principle of the annually balanced budget should be restored to its former place as the ideal of fiscal responsibility? It is difficult to give an unqualified answer to this question. We may certainly say that if the job of maintaining economic stabilization can successfully be accomplished by nonfiscal means, the principle of the annually balanced budget will allow "better" decisions concerning the size of the over-all budget to be made. But, as the preceding chapter showed, there are also disadvantages to placing the full stabilization task on the relevant alternative to fiscal policy, namely, monetary policy. There are no easy solutions here. It seems clear that some adherence to the orthodox

rule of budget balance must be maintained, but that the legislative bodies must be willing to depart from this rule when the economic situation dictates. If the nonfiscal means of combatting either severe depression or inflation are insufficiently powerful to accomplish the task, the employment and price stability criteria must take precedence over the balanced budget rule. But, given vigorous application, these nonfiscal weapons do seem to be of sufficient strength to accomplish desired stabilization. On balance, we may conclude that the rule of the annually balanced budget should be retained as a guide to responsible fiscal decision making in times of normal economic activity, including minor recessions and inflations. Governments should be willing to abandon this rule only when prolonged and severe depression is present or when inflation is proceeding at a dangerous pace.

BUDGET BALANCE AT HIGH-LEVEL INCOME AND EMPLOYMENT

In the years since World War II, a fiscal policy rule has been proposed, and to some extent adopted, which represents a compromise between the principle of the annually balanced budget and the purposeful use of the budget for economic stabilization. This proposed rule or principle is that of budget balance at the most desirable level of national income with built-in or automatic unbalance during periods of recession or inflation.

At any given time, a certain aggregate national income or GNP is required to generate the highest level of resource employment consistent with stability in the value of money. As was pointed out earlier, the precise degree of employment will depend on the institutional structure. The first step in applying this fiscal rule is that of estimating this "most desirable" product or income. The yield of alternative tax structures can be estimated on the basis of the assumption that national income is, in fact, generated at the desired level. The rule states that decisions made regarding taxes and expenditures should always be made *on the assumption that the high-level income is to be maintained, and that balance between the two sides of the account should be present.* For each new item of public spending that is adopted, the Congress should expect to increase the tax rate sufficiently to finance fully the expenditure *at the high-level income.* In this way, through the pairing off of expenditure increments with tax increments, it is hoped that the desirable control feature of the balanced budget principle may be retained.

Actually, national income may fall below or lie above the level estimated to be the most desirable and upon which the tax expenditure decisions are made. But this fiscal rule is designed so as to guarantee the presence of more or less automatic adjustment in the budget when income levels change.

The important device through which this is accomplished is built-in flexibility on both the tax and the expenditure sides of the account. If taxes are levied on the basis of income, either personal or corporate, a constant rate structure will produce less total revenue at lower national incomes than at higher ones. And, insofar as the rate structure contains progressive elements, the change in tax revenues as income changes will be proportionately greater than the income change itself. Not only does a man pay less tax at an annual income of $10,000 than at $20,000 because the base of the tax is lower; he shifts also to a lower bracket for which a lower tax rate is applicable. Further, this built-in flexibility is reinforced if the tax structure imposes heavy rates on those elements of income especially subject to change when national income changes. The corporation income tax is relevant here. Corporate profits is one of the first income sectors to be reduced when the level of total demand falls; similarly, profits tend to move up rapidly when aggregate demand increases. Since the corporation income tax bears primarily on corporate profits, its yield may be expected to change more than proportionately with national income changes.

On the expenditure side, many items of public spending are somewhat insensitive to income changes. As national income falls, government demand for real goods and services does not fall. Therefore, outlay on these real goods and services is reduced only insofar as buying prices are reduced. And, given considerable stickiness of prices against downward shifts in demand, little reduction in government expenditure can be expected. The effects are not symmetrical with national income increases. As national income goes up, government outlay for a fixed amount of real goods and services will tend to increase with the increase in purchase prices, but not to the same extent that tax revenues increase. But aside from the expenditures on real goods and services which do not vary greatly over the income cycle, some important public expenditures vary inversely with national income. If social security payments and unemployment benefits are determined on the basis of certain predefined rules of eligibility, a decline in the over-all level of income and employment will cause these transfer payments to increase. Other budgetary items

such as aid to veterans and aid to agriculture may also vary inversely with national income. Considerable built-in flexibility may thus be present on the expenditure side, but, given existing fiscal institutions, this is of less significance than the flexibility in tax revenues.

A simple numerical example may be introduced to illustrate the way in which built-in flexibility works to promote economic stability. Assume that a federal cash budget is approved amounting to $100 billion, along with a tax structure which will generate $100 billion in revenues, *provided that gross national product is generated at an expected annual rate of $500 billion.* Now let us postulate that a slump in investment spending occurs. This will cause GNP to fall to an annual rate of $470 billion. This reduction in total spending for goods and services (total demand) will directly reduce corporate profits. Unemployment will appear as production rates are cut back. Incomes will fall. Both the personal income tax and the corporation income tax will yield less revenue than before the slump in spending occurred. The total federal tax yield may fall to $95 billion from the previously expected $100 billion. As unemployment develops, federal transfer expenditures also increase and other items of federal spending do not decrease substantially. Federal expenditures may rise to a total of, say, $102 billion. In this way, a deficit of $7 billion, on an annual rate basis, is created automatically as a result of the disproportionate changes in the tax yields and public expenditures in response to the recession. If GNP should fall still more than postulated here, still larger deficits would be created.

The deficits which automatically arise when GNP falls exert an expansionary effect. The deficits act as self-correcting forces which tend to cause national income and employment to move back toward previous high levels. The deficits will continue to be created until and unless national income does return to the estimated desired level. They will add directly to the income flow. If this were the only effect, the corrective effects could hardly be expected to be sufficient to restore stability in themselves. But the deficits must be financed; and the additional purchasing power released through the financing of the deficits will exert continuing expansionary effects through the expanded quantity of money and credit made available. Through the automatic operation of the built-in features, the recession will tend to be reversed quite apart from *additional* deliberate action to use the budget for stabilization purposes. If new items of expenditure should be proposed while the economy is running at less than the de-

sired income and employment level, new taxes must still be levied sufficient to finance the expenditure increments. But the tax yields need only be sufficient, *at the high-level income.*

The rule works in a similar way during periods of inflation. Suppose that a wave of speculative inventory accumulation causes GNP to increase to $520 billion over an established equilibrium rate of $500 billion, the increase taking the form of price increases. Tax yields at constant rates will increase rapidly, and federal expenditures should decline slightly, or, at the least, remain stable.

A surplus of $6 or $7 billion should be created. This surplus will act to counteract the inflationary pressures, and, as the surplus funds are neutralized effectively, purchasing power is withdrawn from the system. So long as the inflation continues, that is, so long as GNP remains above $500 billion, the surpluses will continue to be created. As in the opposite case, no supplementary budgetary or fiscal action is required to make the budget into an effective weapon of economic stabilization.

This proposal for using the federal budget as a stabilization weapon only to the extent that the corrective force can be made quasi-automatic and independent of day-to-day decisions on taxes and expenditures has had powerful support in the United States. The Committee for Economic Development, an organization of leading American businessmen, has recommended this principle as a guiding rule for budgetary policy for more than a decade. To a certain extent, the rule has been followed in practice although no explicit or official adoption has taken place. The continued high-level tax rates over the postwar period have acted to guarantee a high sensitivity of tax yields to shifts in national income. This, coupled with the relative insensitivity of public expenditures, has caused deficits to occur almost automatically during recessions and surpluses to occur during inflations. Supplementary fiscal action has been taken, but the major impact of budgetary policy on the level of economic activity has come about because of the built-in flexibility features (apart, of course, from the effects of the high-level budget per se). This may be most clearly illustrated by reference to the situation in fiscal 1959. In January, 1958, when the budget for fiscal 1959 was first presented, estimates for revenues and expenditures indicated a probable deficit of some $2 billion. As a result of the recession, which exerted a major impact in mid-1958, the deficit for fiscal 1959 was actually more than $12 billion. Only a relatively small proportion of this larger deficit was caused by deliberate changing of the

tax and expenditure levels in direct response to the 1958 recession. Tax rates were maintained at 1957 levels despite strong pressures for reduction. Federal expenditures for 1959 were increased, but only by some $2 billion. The remaining, and major, share of the deficit was a result of built-in flexibility. Most of this occurred on the tax side, primarily through sharply reduced yields of the corporation and personal income taxes.

From such experience as this we may conclude, therefore, that some utilization of the budget for stabilization purposes is likely to take place over future years. Congress has indicated a willingness to allow built-in flexibility to adjust tax yields and expenditures in a compensating way. To this extent, the rule of the annually balanced budget no longer represents the dominant fiscal orthodoxy.

Objections may be raised to the principle of budget balance at high income and employment from both sides of the fence. Those who desire that the federal budget be employed more directly for achieving economic stability emphasize the lag in effect of the adjustments arising from built-in flexibility. Quite clearly, a deficit cannot be generated until and unless a slump has occurred. Fiscal adjustment of this nature must be corrective, not preventive. If the preventing of slumps and booms is the goal sought, built-in budgetary flexibility is not the appropriate weapon. This might appear to be a serious charge against built-in flexibility until the relative inability of experts to forecast levels of economic activity is acknowledged. If, in fact, experts could accurately forecast both booms and recessions a few months in advance, a strong case could be made for relying on direct preventive fiscal and monetary action. In this case, built-in flexibility adjustments become reserve troops held available on a standby basis if advance weapons fail. But experts cannot forecast the future trends in private spending with any degree of accuracy. There is a question as to whether even the direction of change can be predicted. Thus, preventive action is almost as likely to be taken in the wrong direction as in the right. This being so, the case for built-in flexibility becomes stronger.

A second objection, from the same quarter, is based upon the presumed impotence of built-in flexibility in reversing severe expansions and contractions in income, employment, and prices. The argument is that, while the effects are always in the correct direction, no guarantee exists that they will be of sufficient force to accomplish stability. Budgetary flexibility may dampen business fluctuations to some degree, but the cycle will remain. In order to insure adequate

corrective adjustments, so this argument runs, the budget must be used in a more forceful manner. There is, of course, some validity in this objection to built-in flexibility. There is no assurance that the effects are large enough to dampen swings in the cycle sufficiently to produce a rhythm that is acceptable to most individuals. The analysis of built-in flexibility should, however, be recalled. If, in fact, the initial deficit does not reverse the downswing, a larger deficit will be created as income falls further. The elasticity in the revenue structure can be quite large, and major corrective influence can be exerted from this side alone. Secondly, it should be kept in mind that monetary policy can always be counted on to support fiscal policy. No one has advanced built-in flexibility in the budget as the sole weapon of stabilization policy. If monetary policy were to be divorced from stabilization criteria and the primary reliance placed on fiscal correctives, it does seem doubtful if built-in flexibility alone would be sufficient to achieve desirable stabilization objectives. But built-in flexibility, along with a stabilizing monetary policy, should be able to produce reasonably acceptable stability in income, employment, and prices, assuming away the problem of conflict among these objectives themselves, which were previously discussed.

A different sort of objection to the principle of budget balance at high income can be made from the opposing point of view by those who generally adhere to the rule of the annually balanced budget. The claim can be advanced that legislative bodies in democratic societies do not possess economic sophistication sufficient to allow the principle of budget balance at high employment to work well, if at all. During periods of recession, once the rule of annual balance is discarded, legislative bodies will allow automatic deficits to build up, but they will also tend to supplement expenditures and reduce taxes through hasty and ill-advised measures. In other words, the principle of budget balance at high income will, in fact, turn out to be a principle of no balance at all. During periods of inflation, few legislative bodies will have the discipline necessary to allow surpluses to accumulate. Rather, taxes will be cut at least to the point where the budget is no more than balanced. The built-in flexibility becomes in this way really one-way flexibility, and the semblance of control presumably maintained will be lost.

There is much force in this objection, and postwar experience tends to bear out some of the predictions. Congress has rarely allowed surpluses to continue from inflation-induced revenue increases. The continuing increase in revenues has provided a strong temptation for

government to expand expenditures. Whether or not the objection is permanently valid remains to be seen. But the control features inherent in the balanced budget rule do not seem strong when this rule is modified to read "budget balance at high employment."

FUNCTIONAL FINANCE

We may now consider the third, and last, of the three alternative rules for fiscal policy. This rule is based on the idea that the federal budget should be used directly and deliberately for the purpose of economic stabilization, and that nonstabilization objectives of budgetary policy should assume secondary rank. This rule may be called that of "functional finance," a term invented by Professor Abba Lerner.

This rule was developed in direct response to the depression conditions of the 1930's. At that time, the stabilization objective seemed to overwhelm all others in importance. Early statements of this fiscal policy rule tended, therefore, to be somewhat extreme and oversimplified. For example, the rule stated that the only purpose of taxation is to prevent inflation. So long as inflation was not threatened, public expenditures were to be financed by the creation of money. Stated in this way, the functional finance rule ignores the basic purpose of the fiscal structure, which is to provide certain collective or public goods and services. And the decision concerning the appropriate amount of these collective goods and services to be provided is not properly made by limiting consideration to stabilization objectives.

Modern statements of the functional finance rule are more sophisticated. The rule states that the federal budget should be used at all times with a view toward maintaining the desired stability in income, employment, and prices, and that the admittedly useful control features inherent in the balanced budget rule are less important than the achievement of stabilization objectives. No attempt should be made, according to this rule, to balance the budget in any single accounting period, nor should the rule of budget balance at high income be adopted. The criteria for budgetary planning should be the desirable level of the macroeconomic variables—income, employment, and prices. Budget balance might be the result, but it should never be the aim, of budgetary planning.

The proponents of this budgetary rule normally place less reliance on monetary policy as an appropriate stabilization instrument than do those favoring either of the alternative rules. In the pure

Keynesian analysis, monetary policy is quite ineffective in insuring a reversal of a slump or recession due to the floor under the interest rate. Once the floor is reached, monetary policy cannot reduce the interest rate, and it is only through interest rate reductions that monetary policy can be fully effective. Several objections to this argument can be raised, but these will not concern us here. If monetary policy is thus held to be ineffective, fiscal policy must be allowed to assume a more important stabilization role, especially in downswings. The modern advocate of functional finance desires that the budget be deliberately manipulated at the onset of a downturn. Taxes should be reduced, and public spending expanded, with an emphasis usually on the second of these two sides of the unbalancing process.

On the upturn, it has been generally recognized that monetary policy is more effective. There is no ceiling on the interest rate. Hence, functional finance advocates are less emphatic on the need for surplus creation during periods of threatened inflation; however, they raise serious objections to monetary policy on the upswing. They agree it can be fully effective; but they do not like the presumed selective results. The high interest rate levels which a "tight" money policy implies tend to impinge differentially on the investment sector of the economy, notably on certain groups of investors. Since economic growth is also accepted by this group of advocates as an important objective of policy, fiscal policy is supported as superior to monetary policy even during periods of threatened inflation.

From considerations of practical politics, the functional finance approach may be the least acceptable of the three discussed. It seems clearly to have a bias toward deficit creation, given the existence of democratic decision-making institutions. Legislative bodies will be highly responsive to the needs of the economy during periods of recession when the signs indicate both a reduction of taxation and an expansion in public spending. On the other hand, legislative bodies are not likely to respond to inflation when the functional finance rules indicate that taxes should be increased and public expenditures reduced. There seems no doubt that functional finance would be the best of the three rules if the economy were to be guided by a single decision-making agency, a despot, benevolent or otherwise. But this sort of decision making cannot, and should not, exist in a democratic society. Hence, the rule as it actually would work out in practice might be disastrous. Control over expenditure would tend to be eliminated, and a wave of rather irresponsible spending decisions would likely follow.

This does not suggest that the ideas of functional finance have not done much to awaken governments to their responsibility to maintain economic stability. Certainly, should a severe depression recur, the budget must be deliberately used as a stabilization instrument. However, monetary policy plus built-in flexibility may serve efficiently in periods of normal swings in business and economic activity. Any attempt to deliberately adjust the federal budget to offset minor recessions and inflations seems highly questionable.

CONCLUSIONS

In this chapter three alternative rules for fiscal policy were discussed. The first was that of the annually balanced budget. This rule, which represented the dominant fiscal orthodoxy prior to the 1930's, does possess certain desirable control features. The rule tends to cause more responsible decisions to be made concerning the appropriate amount of government spending. However, during periods of economic recession or boom, the rule taken literally tends to be overly restrictive. The government budget may have to be employed as a corrective stabilizing force in the economy.

The rule of budget balance at high income represents a compromise between the annually balanced budget principle and functional finance. The rule tries to combine the desirable control features of budget balance with the stabilization features of functional finance. It does so through the device of balancing the budget at high income, and allowing deficits and surpluses to develop automatically in response to swings in national income below and above the desired level. The rule has been in practice to some extent in the postwar United States. Several objections can be raised to its application, but it seems to represent the most likely rule to be adopted over the immediate future.

Functional finance means that the primary purpose of the government fiscal structure should be that of achieving economic stabilization. This rule, while useful in the Great Depression, overlooks the control features of the balanced budget rule, and ignores the political institutions through which decisions are actually made in a democratic society. The rule actually would work well for a single-minded and all-powerful economic czar. But with legislative bodies actually making the final fiscal choices, the widespread acceptance of functional finance would surely lead to action biased in favor of deficits and against surpluses. Hence, functional finance in the modern world will tend to be associated with inflationary forces.

Part III SOCIAL GOALS AND FISCAL INSTITUTIONS

The central purpose of the fiscal structure is to provide certain specific collective goods and services to the individual members of society. In the modern economy, the amount of resources channeled through the fiscal mechanism in discharge of this purpose is proportionately large relative to the economy itself. The magnitude of the "public sector" of the economy is such that important side effects may be exerted by the fiscal structure. The question raised at once is whether the "fisc" should be used to further certain "social" goals quite apart from the mere provision of collective goods and services, narrowly defined.

To answer this question, we must first develop a "pure theory" of government finance; that is to say, we must first discuss what the fiscal system would look like if the provision of collective goods and services were its only purpose. What criteria determine how much the public economy shall provide? How are the costs allocated among individuals? There is general agreement that the "pure theory" is the least satisfactory part of the whole subject field of public finance. In terms of the organization of this book, however, it seems essential that these "principles" be discussed prior to the more positive and detailed examination of fiscal institutions that follows in subsequent chapters.

Several points need to be made at the outset. The discussion of the "pure theory" is the most difficult of the book. It is impossible to introduce complex ideas simply and accurately at the same time, but I have tried to simplify the argument where possible.

Fiscal theory in its pure sense is concerned with the role of the fiscal system in the political economy.

As we define the pure theory here, this amounts to a description of the ideally neutral or efficient fiscal structure. By this I mean that system which uniquely aims at providing the social group with some "optimal" or "efficient" quantity of collective goods and services and doing so in an "efficient" way. This description stems from the assumption that the system is organized solely to provide such goods and services.

But such an ideally neutral system would run afoul of other purposes which fiscal systems have, variously, been employed to enhance or to support. The discussion must, therefore, introduce some recognition of conflicting norms for fiscal organization. Here the value judgments of the writer must affect, to some extent, the conclusions reached.

In the last two decades, economic growth has been proposed as a goal of policy generally. Should taxes and expenditures be deliberately adjusted so as to accelerate the rate of economic growth? How does the acceptance of this purpose conflict with alternative possible goals?

A more traditional goal of the fiscal structure is that of redistributing incomes and wealth among the individual members of the society. To what extent should the fiscal system be employed to equalize opportunities, incomes, and wealth?

These questions must be answered, or at least discussed, before any "principles" of taxation or of public spending can be derived. Do accelerated growth, greater equality, and economic efficiency inherently conflict as goals of fiscal organization?

The body of public finance theory has not been without "principles." Some attention must be given to the traditional and orthodox "principles" of taxation and of expenditure. Upon what bases are fiscal decisions now made, and can orthodox or traditional principles be defended? The time-honored principles of taxation based on ability to pay and on benefits received must be introduced.

Finally, do the "principles" themselves depend upon the organization of collective decision making? Can any "general" rules be suggested which are particularly suitable for the democratic process as it actually exists in Western nations?

Chapter 12 FISCAL NEUTRALITY AND ECONOMIC EFFICIENCY

THE IDEALLY NEUTRAL FISCAL SYSTEM

"Neutrality" has often been mentioned as one of the goals for the organization of a fiscal system, but the concept has rarely been defined precisely. We shall define the ideally neutral fiscal system as that system which provides collective goods and services most "efficiently." This merely begs the question, however, since "efficiency" itself requires definition.

Before we proceed further, it is best to dispel some false notions of fiscal neutrality. The neutral fiscal system is not that one which exerts no influence on individual behavior. What is meant by no influence? There is nothing provided with which to make a comparison. Under a well-established fiscal system individual behavior must be different from that in an economy which provides no collective goods and services, the no-government economy that we have employed several times for comparative purposes. The point can be made by way of a simple illustration. If no police protection were provided by government, private people would change their behavior by hiring more night watchmen, bodyguards, and private detectives. The provision of collective goods through a governmental unit allows private goods that are close substitutes to be reduced in usage. The idea of fiscal neutrality cannot, therefore, be conceived in terms of an absence of effect on private choices.

A more appropriate and useful conception may begin with an analogy with the market economy. If the fiscal system is conceived as the means through which collective goods and services are provided to members of the society without any subsidiary or supplementary social functions, the market analogy comes to mind. We may begin, in this way, to get a better idea of the meaning of "efficiency."

Let us take an ordinary privately produced good, say, shoes. We say that this commodity is efficiently provided if the market price accurately reflects the marginal costs of production. If price equals marginal cost, the consumer is faced with a choice among alternatives which accurately reflect relative costs of this commodity and others in the economy. If, for example, a pair of shoes is priced at $10, and $10 equals marginal cost, the customer who purchases shoes is "directing" the economy to devote resources to shoe production which could produce $10 worth in alternative employments. On the other hand, if the market price were $15, we could say that the consumer is not confronted with "true" alternatives. An artificial wedge would be inserted between selling price and genuine opportunity cost. A way could be worked out whereby both the consumer and the resource suppliers could be made better off. The shoes are not provided "efficiently" unless the price is $10.

A more sophisticated, and more accurate, way of stating this argument is to say that a necessary condition for the "efficient" organization of the market economy is that marginal rates of substitution among goods and services in consumption must be equal to the marginal rates of substitution among goods and services in production. If this basic condition is not satisfied, it can be shown that at least one person in the group can be made better off without anyone else in the system being made worse off. An "efficient" position in modern welfare economics is defined as a position from which no change can be made without making someone worse off.

As we saw in Chapter 3, the characteristic feature of collective goods is the indivisibility of the services provided to individuals. From this it follows that such goods and services cannot be directly "priced"; the market analogy cannot be fully applied. If collective goods and services could be "priced," the services would have to be divisible, and there would be no need for government. The benefits of the lighthouse shine on all users indiscriminately, quite independently of the individual contributions or taxes for its support. The same can be said of the $40 billion spent annually by the federal government on national defense. It is impossible to sell individually public services which are by their nature indivisible. But some method of financing such services must be worked out, and this is the conceptual origin of the tax system.

In spite of the impossibility of "pricing" genuinely collective goods directly, a method of allocating or distributing the costs of such services may be worked out which is closely analogous to the

pricing process in ordinary markets. The necessary conditions are the same as those which must be satisfied for private goods markets. Individuals must be placed in a position where the marginal rates of substitution among both private and collective goods in usage or consumption are equal to the marginal rates of substitution among both private and collective goods in production. For a single collective good, the proper amount will be provided when the aggregate marginal evaluation of that good by all citizens is equal to its marginal cost, that is, its marginal rate of substitution in production.

A simple example will clarify this. Suppose we are considering a single island society with only two citizens, Mr. Crusoe and Mr. Friday. The decision confronted is whether to build a fishing net (a collective good) 10 feet long or 12 feet long. The difference in the total cost of building the two nets is 6 days' labor. Now let us say that the first citizen, Crusoe, estimates the additional length of the net to be worth as much as 4 days' labor to him. If the second citizen, Friday, considers the larger net to be worth as much as 2 days' labor to him individually, the "collectivity" should decide to build the larger net with Crusoe working (paying taxes) 4 days and Friday 2 days. Any other decision would be "inefficient" for it can be readily shown that with any other choice some change can be worked out which will make both parties to the decision better off.

In this way it becomes conceptually possible to imagine an ideally "efficient" or "neutral" fiscal system. Each individual will pay an incremental tax for collective goods and services equal to the incremental benefits that he receives from these goods and services, and each collective service would be provided in sufficient quantity to make the total incremental benefits accruing to all citizens equal to the marginal costs of providing the services. For example, if the citizens in the United States, taken together, should evaluate the benefits from an additional ballistic missile at $20 billion, the missile development should be undertaken if its added cost is less than $20 billion. The costs should be distributed in accordance with the individual evaluations. If the incremental or marginal cost of the development project is estimated at more than $20 billion, the project should not be undertaken. The tax system which imposes on the people a higher aggregate cost or which distributes the cost in some manner contrary to that determined by individual evaluation of the marginal benefits must violate fiscal neutrality in the sense here defined.

The "efficient" or "neutral" fiscal system must embody taxation on the basis of the so-called "benefit principle." But it should be noted that the proper interpretation of this principle in this connection is that taxes should be levied so as to equal *marginal* benefits of collectively provided goods and services, not *total* benefits. The failure to distinguish between these two possible interpretations has been the source of much confusion.

The Wicksell Principle of Taxation

As we shall see, the ideally efficient fiscal system just described has never been put into practice, primarily because other purposes than efficiency have always affected fiscal decisions. Because of this, little attention has been given to the problem of trying to put any approximation of the purely neutral system into practice. Until recently, Knut Wicksell, a distinguished Swedish economist, was the only one to recognize this problem. He proposed a unique plan for implementing the efficiency principle. It will be helpful to discuss Wicksell's plan briefly.

The first step in organizing a fiscal system on these lines would be to tie each decision on public expenditure to a decision on the distribution of the tax burden. No approximation to a "correct" amount of collective services can be attained until the two sides are joined in some way. Secondly, Wicksell proposed that the ordinary decision-making rule of majority vote be suspended for fiscal decisions. Ideally, unanimity among members of the legislative body should be required, but Wicksell recognized the extreme limitations of this restriction. Accordingly, he stated that the simple majority rule be replaced in fiscal decisions by a rule of relative unanimity. Relative unanimity was defined in terms of a qualified majority, perhaps five sixths of the members of the assembly.

When a new item of public expenditure is proposed, under the Wicksell scheme, a whole set of alternative distributions of the tax load is to be drawn up. These are then taken up by the assembly in order. As soon as one of these distributions receives a required majority, the expenditure is to be adopted along with the tax bill. If no tax distribution which can secure the required support exists, the proposed expenditure is to be rejected.

The Wicksell approach may be illustrated by an example. Suppose that a municipality is trying to decide whether to build a new civic auditorium. If the auditorium is really desired by the citizens, that is, desired more than alternative uses of the required funds,

there must exist at least one arrangement of the costs among the citizens upon which all of them will agree, or substantially so. If no such distribution exists, the auditorium is not valued as highly as the private goods and services which could be purchased with the tax dollars in its stead. Hence, the auditorium should not be a municipal project. Wicksell tried to propose institutional and organizational arrangements which would insure that fiscal decisions be made efficiently.

The sharp discrepancy between the Wicksell fiscal scheme and that to be found in actual practice in most economies today suggests that fiscal decisions are probably not very efficient. There seems little chance that collective goods and services are provided in any close approximation to the "correct" amount as indicated by individual evaluations. Some services may be overextended; other services may be provided at less than "optimum" levels. The reason for this apparent inefficiency is that existing systems are constructed with relatively little regard for neutrality or efficiency in decision making. Other purposes have been dominant in shaping our fiscal institutions. Subsequent chapters of Part III will discuss some of these other goals.

SECOND-ORDER EFFICIENCY

The fully "efficient" fiscal system could serve as a norm for institutional reorganization only if the system were devoted uniquely to the provision of collective goods and services. But modern societies are willing to sacrifice "efficiency" in the sense here discussed in order to employ the fiscal system for other purposes. To what extent can economic efficiency be retained as a criterion for actual fiscal organization?

When we say that collective goods and services are not provided efficiently, we are saying that taxes and public expenditures are not related directly in the decision making of the individual. This being true, either taxes or public expenditures can affect the private economic behavior of individuals in many possible ways. If an individual is faced with a tax bill that does not reflect his own marginal evaluation of the increment of public service financed, this tax charge takes on characteristics of a net withdrawal of real income. With a reduced real income, the individual will modify his behavior, and the direction of change will depend on the precise nature of the tax. The results are similar on the expenditure side. If an individual receives a net benefit, he will act as if this is a net

addition to his real income. The manner in which his behavior will be modified depends on the particular way in which the additional real income is provided to him.

One way of approaching the problem of second-order efficiency is that of moving to the other extreme from that position implicit in the previous discussion of the ideally neutral system. Instead of assuming that the fiscal system is organized solely for the purpose of providing collective goods, we may now assume that no collective goods of the ordinary sort are provided. The fiscal system may be considered to be organized to accomplish redistributive purposes only. We know, of course, that any given fiscal structure will represent some mixture of our two cases.[1]

At this point we must face up to a difficulty which cannot be resolved without a long and complex argument. Unless all parts of the economy are simultaneously adjusted, we cannot with full accuracy say that, under these conditions, the fiscal institution which distorts private choices the least necessarily increases over-all "efficiency" in the private economy more than its alternatives. The fiscal principle of "least-price distortion," which has often been advanced, is not fully correct. Under certain conditions, even with the purely redistributive fiscal system, a tax that is used deliberately to insert a wedge between a selling price and a cost or supply price may lead to more efficient private decisions. The result depends in each case on the types and the extent of distortion already presented in the alternatives for private choice prior to the tax levy. As mentioned, this elementary book is not the appropriate place to elaborate the basis of this point. It will be sufficient to say only that we may accept the principle of "least-price distortion" as a "second-best" or "second-order" approach to efficiency. We must recognize that the results arising from a rigorous application of this principle will not always be the desired ones. It seems reasonable, nevertheless, that, normally, application of the principle will lead to more efficient private choices.

What specific implications arise from this principle of least-price distortion? First of all, when we consider the taxing side of the fiscal process, the principle indicates that, normally, the more general the tax, the less it will interfere with individual choices. The general income tax is preferred on these grounds to the particular excise

[1]Professor Richard A. Musgrave has distinguished between the *allocation branch* and the *distributive branch* of the budget in order to emphasize the different principles applicable for each branch. See his *Theory of Public Finance* (New York: McGraw-Hill Book Co., 1959).

or commodity tax. The former reduces income without placing a particular incentive on the consumer to modify his consumption in a specific manner. The tax imposed on several or all commodities will tend to be preferred over the tax on a single commodity.

The Lump-Sum Tax

Somewhat interestingly, the "ideal" tax from the point of the principle of least-price distortion is the lump-sum or poll tax. A tax levied upon the individual independently of a quantitative base can exert little influence on his behavior. Behavior will be modified only to the extent that the reduced real income of the individual reduces his consumption opportunities. The tax provides the individual with no incentive to economize on any form of consumption. The lump-sum tax is unimportant in actual fiscal systems. The conception is useful only in certain analytical models as this tax is contrasted with others which do exert more important effects on behavior.

The General Proportionate Income Tax

Leaving the lump-sum tax, the tax that is levied proportionately on personal income satisfies the least-distortion criterion quite well. The individual is attracted to consume more leisure than he would without the tax, but his general pattern of consumption is not greatly modified. His choice between methods of earning real income as between the riskier and the less risky ventures is not affected as would be the case with the progressive income tax.

The General Sales Tax

If taxation is to be placed on the purchase or consumption of particular commodities, the least-distortion principle indicates that one which is levied on the whole range of commodities is perhaps to be preferred over the tax which is concentrated on one of a few commodities. This tax is, of course, typical of many of the state revenue structures in the United States.

The Lump-Sum Subsidy

Effects on the expenditure side are quite similar to those on the tax side. The "ideal" expenditure from the view of exerting the least distortion on individual private choice is the payment of lump-sum subsidies to individuals. These subsidities, which would be com-

pletely unrelated to the economic status of the individual, would influence behavior only to the extent that real income increases cause certain changes in the choice pattern.

The Conception of General Expenditure

Nothing on the public spending side corresponds closely with the general proportional income tax on the tax side. The idea of public expenditure being devoted to projects which are of general benefit to all members of the community is meaningful only to a certain extent. National defense expenditures are perhaps the closest modern equivalent. For the most part, however, expenditures are made for particular projects and the benefits from each of the collective projects undertaken will tend to affect specially situated groups in the economy. If this is true, significant effects on individual behavior must be expected. A few examples will suffice. The decision to build the Tennessee Valley Authority affected private decisions in the Tennessee Valley. The relocation of a highway affects many private decisions of property owners along both the old and the new routes.

Here we record an interesting phenomenon in the development of fiscal theory and policy. The principle of organizing the system so as to effect the least possible distortion in the structure of individual choices has been applied normally to the tax distribution, but it has rarely been applied to the distribution of public expenditures. Yet, quite clearly, if the principle is applicable on the one side it is applicable on the other. There is no more reason for saying that a general tax is to be preferred over a specific one than there is for saying that a general expenditure program is to be preferred over a specific program, specific being defined geographically or otherwise.

This introduces a peculiar asymmetry in fiscal theory that we shall have occasion to refer to again later in the book. Fiscal tradition has been built on the idea that the least-distortion principle applies only to the tax side of the account. This idea has affected the legal structure of the government. The courts have interpreted the United States Constitution to say that geographical uniformity of taxes is required. In other words, an individual in California must be accorded the same federal tax treatment as the equally situated individual in Virginia. But mention has rarely been made of the necessity for benefits from federal expenditures to be provided equally to equally situated individuals, either geographically or otherwise.

EQUITY AND EFFICIENCY

Equal Treatment for Equals

As suggested previously, the conception of fiscal equity, that is, equal treatment for equally situated individuals, has been applied to the distribution of taxes, but not to the distribution of expenditures in the same manner. This equity criterion, although motivated on grounds completely divorced from economic efficiency, does carry with it certain implications for efficiency in the structure of private choices. The equal-treatment-for-equals principle does not guarantee that private choices are not modified by the fiscal structure, but it does, if fully applied, serve to prevent differential effects on separate groups or individuals. The meaningfulness of this equity principle depends, however, on the way in which "equals" are defined for purposes of fiscal treatment. Differential taxes could be imposed without violation to the technical version of the equity principle if the group of "equals" is defined sufficiently narrowly. For example, a tax could conceivably be imposed on all redheaded, nonsmoking bachelors. To the extent that the same tax is applied on all persons in this category, the principle of equity could be applied. But common sense indicates that such a tax would be held to violate the real meaning of the principle. To be acceptable, a tax must be applied to rather broad groupings; in other words, "equals" for fiscal purposes must be defined in some reasonable and not wholly arbitrary manner.

To the extent that this is true, the general respect for the equity principle in the organization of the fiscal structure has been one factor tending to maintain general neutrality in effects. The deliberate distortion of private choices in a differential way has been prevented, especially in the distribution of taxes. The asymmetry in the organization of the tax and the expenditure sides of the fiscal account has prevented the same sort of tradition on the expenditure side.

This equity principle will be discussed in more detail in a later chapter. At this point it is suggested merely as one factor which, unintentionally, serves to prevent undue distortion of the resource allocation mechanism of the private economy by the fiscal structure.

EFFICIENCY AS A FISCAL NORM

Insofar as efficiency in the private economy has constituted a goal of fiscal organization, it has done so more or less negatively. That is to say, the principle of least-resource or least-price distortion,

as reinforced by the principle of equity, has caused fiscal institutions to be constructed so as to allow generally free play for private economic decisions. A more positive role for the fiscal system in actually promoting economic efficiency has rarely been proposed or adopted.

Such a positive role is possible, however, and it is worthy of a brief discussion. The tax and expenditure structure provides a powerful means of offsetting those elements of inefficiency that arise in the ordinary workings of the market economy. For example, economists generally recognize that the existence of monopoly tends to make the market system inefficient. One means of reducing the concentration of economic power that is necessary for monopoly would be to place differentially high tax rates on the incomes of corporations possessing more than a specified percentage of the total sales for a single commodity grouping. Alternatively, taxes could be imposed on advertising outlays beyond a certain percentage of sales; or, to accomplish the same purpose, advertising outlays beyond a certain amount could be disallowed as a deduction from corporate income taxation. The same treatment could be easily applied to labor union monopoly. Unions extending over whole industries could be subjected to special taxes with a view toward reducing their monopoly power.

The expenditure side lends itself even more nicely to possible deliberate steps to attain over-all economic efficiency. Subsidies can be granted to individuals living in depressed areas to encourage them to move to other more highly developed areas of the economy. Tax deductions or positive subsidies can be granted to capital investment in areas of surplus labor. The practice of state and local units of government providing tax and expenditure incentives for industrial firms to encourage location is a familiar one in the American economy.

Conceivably, government could set up industrial plants of its own deliberately to introduce competition into otherwise monopolized industries. The "yardstick" purpose was one of the main arguments for the construction of the Tennessee Valley Authority in the 1930's.

Considerable support can be adduced for many of these, or similar, proposals to utilize the fiscal system, either through taxes or expenditures or both, as a positive means of promoting greater efficiency in the organization of the market economy. In the first place, the dividing line between accepting the principle of negatively oriented minimum distortion of prices and resource allocation and accepting the positively oriented principle of promoting greater effi-

ciency is hazy at best. When tax proposals are considered, it seems reasonable to take into account the effects on individual choices and to say that, in normal circumstances, that tax which exerts the least influence on individual choice, other things being equal, should be preferred. But does it not seem equally reasonable to say that, given an existing distortion in individual alternatives due to monopoly or restriction of any sort, that tax which shifts the pattern of choice toward a more "efficient" solution is to be preferred, other things being the same? No answer to this question is possible, apart from explicit value judgments.

It will be argued here that the distinction between the negative principle of least-price distortion or second-order efficiency and the positive principle of deliberately using the fiscal system to promote efficiency is a useful one. It will be argued further that there are grounds for holding that the second principle is not an appropriate one for the organization of the fiscal system.

There are two fundamental reasons why the tax-expenditure structure should not be employed deliberately to promote economic efficiency. The first reason lies in the difficulty of defining and of distinguishing changes which will, in fact, produce greater "efficiency" in the total economy. We have briefly touched on the "second-best" difficulty previously. But even disregarding this, no objectively determinate measure of economic efficiency exists that might be utilized to guide fiscal decisions. In some situations the maximization of real national income might appear to be an acceptable measure, but its limitations may be illustrated by a single example.

Suppose that a proposal is submitted to provide public subsidies for outmigration of individuals and families from areas of low average incomes. These subsidies will encourage some families to migrate to the areas of the economy with higher average incomes. As measured in terms of total national income, the national economy is made more "efficient" by the change. But, actually, the individuals involved may have been just as satisfied in the low-income position as in the newly established and higher-income position. Psychic income may be higher in the low-income regions; there is no objective way of measuring this sort of "income" except in terms of individual choices. Measured real income will tend to give a false notion of objectivity to the conception of "efficiency."

A second reason for saying that the tax-expenditure structure should not be employed to promote over-all economic efficiency in a positive way is based on a recognition of the actual process of

decision making in a democratically organized society. The first objections may be disregarded in a despotism where all collective decisions are made by a single individual or a single-minded group. "Efficiency" in such a system may be defined as desired by the chooser, and the fiscal system may be used, along with other devices, to promote greater "efficiency" as defined. In a democracy, however, collective decision making is a complex process. Final decisions are the result of a whole chain of individual voting procedures, the debates and choices of representative assemblies, the exercise of executive leadership, the partisan activity of political parties, the conflicts of pressure group interest, and the intricacies of bureaucratic administration. At no place in this decision-making process can over-all "efficiency" in the private economy be taken as the overriding aim, and fiscal devices cannot readily be geared to accomplish such "efficiency." Instead, if the efficiency-promoting purpose of the fiscal system is admitted as legitimate, there will likely arise a rather irresponsible and arbitrary set of fiscal devices, presented under the guise of "efficiency," which serve to restrict the reasonably free operation of the market economy. In other words, the decision process represented, say, in the United States federal government, seems likely to be unable to distinguish "efficient" from "inefficient" changes, even in the broadest possible sense. Instead of providing subsidies to outmigration from depressed areas created by a declining resource base, the decision structure is likely to produce subsidies to industries and to individuals to remain in the uneconomic areas. In the name of securing greater efficiency, the actual decision process will tend to produce results like the tax depletion allowance for certain extractive industries which serves to attract an excessive quantity of investment into those industries.

CONCLUSION

The ideally neutral or "efficient" fiscal system is one that has as a single purpose the provision of collective goods and services to individuals. This system will make the tax-expenditure process as closely analogous to the market economy as is possible. But due to the indivisibility of benefits from collective goods and services, direct "pricing" is not available. Hence, the tax structure must be made to reflect individual evaluations of the marginal benefits from government services, and the total quantity of public services provided must be based on some aggregation of these individual evaluations. In one sense, the "ideal" principle of taxation is the benefit

principle. Until quite recently, Knut Wicksell has been the only economist who attempted to trace out the implications of the ideally neutral fiscal system in terms of decision-making institutions.

Many other goals are embodied in the actual fiscal systems of the modern world. Hence, we can expect some external effects to be exerted on individual behavior by both taxes and public expenditures. Second-order efficiency can still be taken as a proximate goal for judging taxes and expenditure proposals, although the limitations must be kept in mind. Normally, other things remaining the same, when considered independently, that tax or expenditure which affects the behavior of the individual the least should be preferred. This allows the principle of least-price or least-resource distortion to have some meaning.

Using the least-distortion principle, in isolation from all others, the lump-sum or poll tax may be taken as the proximate ideal. This tax exerts an influence on individual behavior only through its effects on real income. Applied more generally, the least-distortion principle allows the general income tax to be preferred over the commodity tax, and the proportional tax over the progressive tax. It also allows a normative judgment favoring the general sales tax applied to all commodities over the specific excise tax levied on one or a few commodities.

Similar conclusions can be applied to the expenditure side, but we noted the asymmetry that exists here. The conception of general expenditure has never been rigorously formulated nor has the idea been translated into the actual fiscal structure.

Beyond the idea of least distortion, it is possible to use the fiscal system positively in actually promoting economic efficiency. We may cite instances of this usage, but we have argued against this extension of the system. Efficiency is a difficult concept to define at best, and the institutions for decision making are imperfect. Widespread departure from the ideal of least distortion, as supplemented by the principle of equity, would seem to open the door for all sorts of experimental tinkering with the tax-expenditure structure, with dubious effects.

SUPPLEMENTARY READING

The student interested in Wicksell's taxation proposals should consult Knut Wicksell, "A New Principle of Just Taxation," contained in International Economic Association, *Classics in the Theory of Public Finance*, edited by A. T. Peacock and R. A. Musgrave (London: Macmillan & Co., 1958).

Chapter 13 ECONOMIC GROWTH AS A FISCAL OBJECTIVE

One of the characteristic features of Western capitalistic economics has been the rapid rate of economic progress that has occurred in the last two centuries. This growth has, in the past, been far from steady. Growth trends have been interrupted, from time to time, by serious recession and depression. Only since the Great Depression of the 1930's has it come to be fully realized that the economic stability which is desirable is reasonable stability in some continued rate of growth over time, not any absolute stability in national income.

How does an economy grow? Progress takes place as a result of capital formation, technological change, and population increase. If we think of growth in per capita terms, the last of these three factors may be partially left out of account. By a decision to set aside a portion of current income, that is, to refrain from consuming, and to devote this income to the formation of real capital, the income stream over all future time may be increased. This result is based on the fact that capital investment is productive in a purely physical sense. Therefore, whether we refer to an individual or to the community, a decision to devote current income or resources to capital formation can increase income in future periods, that is to say, can cause the economy to "grow." Productive capabilities of the whole economy are increased over time, and, presumably, so is the total of human welfare.

The relationship between technological change and economic growth is equally clear. But the relationship between current behavior and the rate of technological change is not so obvious. It is very difficult to know upon what factors technological change really depends. Although we may perhaps feel reasonably certain that the

sacrifice of current income to invest in technological change (education, research) is at least as productive as investment in real capital formation, the rate of return is not readily measurable.

GROWTH IN THE NO-GOVERNMENT ECONOMY

It will be useful to examine the process of growth or development in an economy in which we assume that no government exists. As in the other cases, we shall assume an orderly anarchy in which individuals mutually respect a set of rules covering contractual arrangements and property rights. By saying that no government exists, we mean only that no specific collective goods and services are provided through a fiscal process.

Economic growth will occur in this economy. People will set aside income for capital formation and for investment in technological change. Economic progress will tend to be continuous. The relevant growth decisions will be made by private individuals and families; the interests of future generations will be taken into account because each family will, to some extent, be concerned with the well-being of its own offspring as well as future generations taken as a group. Private families will save a portion of current income in each period, and the market organization will tend to channel this saving into the capital investment projects of the economy by means of a financial system which will be established. As investment proceeds, growth in the level of real income will occur and, if society possesses the necessary resource base (including the human resource), the rate of development will be rapid.

GROWTH IN THE IDEALLY NEUTRAL POLITICAL ECONOMY

Now let us impose a governmental structure of the ordinary sort on this hypothetical society. Collective goods and services are provided. The government takes care of the common defense, guarantees against fraud and deception, finances lighthouses, roads, education, and so on. Let us, however, continue to restrict the model here by saying that these collective goods and services are provided in an ideally neutral or "efficient" way as outlined in the preceding chapter. Collective goods and services would be provided in the quantities indicated by the marginal evaluation of individuals, and these services would be financed in such a way as to reflect individual evaluations.

The process of economic growth would proceed very similarly to the process in the no-government economy. But, insofar as the government now provides certain collective goods and services that are valued highly by individuals, it seems certain that the rate of economic growth would be larger in this economy than in the no-government case. This conclusion depends for its validity on the assumption that the collective goods and services provided by government in such a situation would be normally *complementary* rather than *competitive* with private investment projects, and, therefore, private investment would be made more productive. Investment in the lighthouse will make investment in shipping more, not less, productive.

It should be noted that collective goods and services may take the form of either capital or consumption goods. The distinguishing characteristic of collective services, namely, the indivisibility of benefit among the separate users, does not limit the range of services provided to either category. The community may put up sandbags and prevent a single threatened flood. Or it may decide to build a permanent dike as a protection against all floods in the future. Many collective goods do seem to take on the forms of real capital formation, and, to the extent that this is true, the ideally neutral fiscal system will generate greater growth in real income than the economy without government. Collective decisions may be made to invest in highways, parks, public buildings, harbors, permanent defense installations, or flood control projects, all of which take the form of real capital investment.

In the ideally "efficient" political economy, all growth decisions would still be made by individuals and the final rate of growth would be based on individuals' evaluations of current versus future benefits from receiving income. Insofar as certain capital investment projects were undertaken through the government mechanism, some collective investment will take place. But this investment itself reflects individual evaluation of the projects financed, by the very nature of the ideally "efficient" system.

GROWTH IN THE REAL-WORLD ECONOMY

As we said in Chapter 12, fiscal systems in the real world never approximate ideal efficiency or neutrality for several reasons. As fiscal systems are actually organized, tax revenues are collected from levies that have little or no connection with the public services received, and the quantity of collective goods and services provided

through government is a result of a complex process in which individual evaluations enter only rather indirectly. As a result, fiscal institutions on either the tax or the expenditure side can exert important effects on private decisions concerning the rate of saving and investment.

It is, of course, possible that both "general" taxes and "general" expenditures could be described which would exert no influence on saving-investing decisions of individuals, families, and business firms. The lump-sum tax and the lump-sum subsidy, treated briefly in the earlier chapter, should exercise no influence on these decisions. But these are wholly unreal conceptions. The possible effects exerted by the fiscal structure must be recognized. At this point will be sketched only a few of the more basic means through which the fiscal system can exert important effects on private decisions to save and to invest. Analysis must always remain *comparative*, however, and the conception of the ideally neutral tax and expenditure structure will be used as a benchmark against which to measure effects. Subsequently, when it is said that a specific fiscal device or institution retards or accelerates growth, it means *relative* to that system in which private choices are not distorted.

FISCAL INSTITUTIONS RETARDING ECONOMIC GROWTH

Real Income as a Tax Base

Fiscal systems have come more and more to be based on income as a measure of tax liability. The requirement that an individual pay out a certain share of his real income, as measured in the tax base, to the government in taxes must place a differential premium on those types of psychic income which add to satisfaction or utility but which do not enter into the measurement of real income. Leisure, or simply the not-earning of real income, adds to utility but is almost impossible to measure or to tax. Insofar as the enjoyment of leisure is considered to add exclusively to current utility, all tax systems employing measured real income as a base must retard the rate of growth. Individuals will be led to choose more leisure and less real goods and services than they would under the ideally neutral tax system, and, having less real goods and services produced, they will put aside less for investment.

It is not clear, however, that leisure can be treated exclusively as adding to current utility. Leisure time may be considered as direct

"investment" if it is spent in education or in creative activity broadly conceived. The roots of technological progress may lie in such leisure time being available. Thus, the impact of a tax structure which exempts leisure and other like elements of psychic income from the tax base is not so readily predictable as might appear to be the case. The important variable is the usage to which private individuals actually put their leisure time. In the United States at the present, the exemption of leisure from the tax base probably does exert a retarding influence on the rate of growth.

Income Tax Progression

Progression in the rates of tax on income will serve to reinforce the effect discussed previously. The incremental or marginal tax rate in a progressive structure is higher than the average rate. Therefore, the individual will have a greater incentive to secure utility in a form that is not subject to tax. There must be some tendency for him to work less and to take more leisure.

A more important effect of a highly progressive rate structure is the pattern of incidence imposed. Progression insures that the incomes of the higher-income group are taxed proportionately more than the incomes of the middle- and lower-income groups. This tends to reduce the total rate of saving for the economy, because, on the average, the proportion of total income saved increases with increasing income.

Taxation of Transfers of Wealth

The taxation of transfers of wealth or money capital through gift or inheritance or estate levies serves to retard the rate of aggregate economic growth. Individuals who plan to accumulate saving with a view toward providing for their progeny must be affected in their behavior. Normally, the effect will be to encourage them to save less and to consume more current income.

Double Taxation of Saving

Many competent scholars allege that an income tax system that does not exempt income to be saved from the tax base will retard economic progress. The argument is that income saved is really taxed twice, once when it is originally received as income and again when its fruits are taxed in subsequent periods. In its simplest form, the argument reduces to an arithmetical truism.

Assume an individual receives $2,000 in current income. Without any tax, assume that he would save half and spend half. Let us now assume a tax rate of 10 per cent. He will pay $200 in taxes, $100 on each half. If he saves the full $900 from the first thousand and spends the full $900 left from the second thousand, he will no longer be splitting his disposable income into two equal present values. Assume a net yield of 5 per cent. The $900 saved will yield a net return of $45 per year. But out of this $45, a tax of $4.50 will have to be paid, thus reducing the net after-tax yield to $40.50. At 5 per cent, this discounts to a present value of less than $900. The individual who would, in the absence of the tax, save half his income, will now tend to save slightly less than half of his after-tax disposable income.

Double Taxation of Corporate Income

Income earned through the organization of business activity in the corporate form is taxed twice in the United States, once as received by the corporation and secondly as received by individuals. A large share of saving in the modern economy is carried out by corporations that retain earnings and reinvest these earnings directly in capital formation. It seems clear that the imposition of the corporation income tax reduces the amount of reinvestment of earnings below that which would take place under a broadened personal income taxation scheme.

In addition, the general effects of the corporation income tax are to reduce the rate of return on capital investment. This reduction in the average rate of return may cause individuals to save less out of current income.

Social Welfare Expenditures

The rate of economic growth can be retarded by fiscal institutions on the spending as well as on the tax side. Social welfare expenditures, such as government provision of unemployment compensation, old-age and survivors insurance, and insurance on mortgage loans, act to reduce the rate of private saving. Through such expenditure programs as these, the collectivity replaces the family as the planning unit in the society to a certain extent. Individual members of a family group are absolved of a certain sense of responsibility in providing either for indigent members or for their own consumption in future years. Insofar as collective saving through the

accumulation of reserves replaces private saving, no retardation of the rate of economic growth need take place. It seems unlikely, however, that the political process produces sufficient collective saving to offset all reduction in private saving. Current consumption out of income is probably increased.

Additional effects are also exerted through the influence of welfare expenditures on the work-leisure choices of individuals. Insofar as the receipt of welfare payments reduces the incentives of individuals to work, national real income is reduced, and with this, the rate of real capital formation.

FISCAL INSTITUTIONS ACCELERATING ECONOMIC GROWTH

Favorable Tax Treatment for Capital Gains

In the United States, income arising in the form of increased values of capital assets is taxed less heavily than income arising from other sources. This provision must surely cause individuals to attempt to secure income in the form of capital gains if possible. Hence a greater portion of income earned will be channeled into the purchase of capital assets or claims. Asset or claim prices will be increased and yield rates will be driven down. More investment will be undertaken, and the rate of growth in the economy will be accelerated, provided that the reduction in the yield rate does not substantially reduce the amount of private saving.

The favorable treatment of capital gains also exerts an important influence on the growth rate through the possibility of internal financing of large corporations. Given the treatment of capital gains, it becomes advantageous to the individual taxpayer to invest in a corporation which will reinvest earnings rather than pay these out as dividends. The income, if and when realized, will in this way show up as capital gains in share values. Thus, companies are led to plow back more profits into reinvestment than they would otherwise do. In a sense, the tax structure discriminates against corporate income paid out as dividends.

Accelerated Amortization

Since World War II, business firms under certain conditions have been allowed for tax purposes to depreciate assets more rapidly than the real rate of physical depreciation. This feature serves to decrease taxable profits during early years of the asset-investment

plan and to make available to the firm a greater reserve for depreciation. The firm is directly encouraged to undertake investment in projects promising returns in reasonably short-term periods. Also, by delaying the total tax liability through time, the firm is allowed to earn interest on the unreported profits in the early years, providing yet another income source for additional internal investment.

Expenditures for "Social Overhead" Capital

When the process of economic growth in the ideally neutral political economy was discussed, the point was made that many goods of a collective nature are, in fact, investment or capital goods. Hence, the ideally neutral system would make some provision for growth in the form of projects now commonly called "social overhead" capital, such as roads, harbors, lighthouses, drainage, sanitary facilities, dams, bridges, dikes, and educational systems. But it is clear that, in any actual fiscal system, the larger the sum expended on projects which are, in fact, complementary to private investment projects, the higher will be the rate of return on private investment, and, presumably, the greater the amount of investment. This effect will extend only through the set of capital projects which do not directly compete with private investment. Once the interrelationship becomes a competitive one, the effects on the rate of growth cannot be accurately estimated *a priori*. For example, public expenditure invested to drain the Florida mucklands will no doubt increase the rate of return on private capital invested in the area. Public expenditure invested in a vegetable processing plant will not likely have similar effects.

Expenditure for Education and Research

Similar conclusions to those preceding follow from considering public expenditure for education and research. In many cases, the full return from private investment in education and in research and development cannot be secured by the individual or firm undertaking the expenditure. A new technique, once known, should be made freely available. Hence private firms are not likely to invest sums sufficiently large to maximize the rate of technological advance. Research is, to some extent at least, an indivisible good.

Injection of Money by Nonfiscal Means

As an economy becomes more productive, that is, "grows," additions to the stock of circulating medium, money, will be required

unless the product price level is to be allowed to fall secularly. One means of injecting the new currency would be by running a slight budgetary deficit; in other words, allowing the new money or purchasing power to purchase collective goods and services. If this procedure is not adopted, the newly created purchasing power may be introduced via the banking mechanism. Banks may be allowed to add to the stock of money through an active "easy money" policy on the part of the authorities. This will tend to cause investment demand to be greater, and the new currency will be directed toward an expansion of the investment sector of the economy relative to the consumption sector. This is different from the situation in which slight deficits are allowed. Economic growth is increased by the policy which injects new money via the banking system. The continued injection of money through the banking system effectively forces a rate of saving and investment greater than that which would be undertaken if the budgetary method is employed.

This means of accelerating economic growth is not, strictly speaking, a fiscal institution comparable to the others discussed in this section. Monetary and fiscal decisions must always be interdependent, and a decision to inject new money via the banking system is likewise a fiscal decision to refrain from injecting money via the budget. Additional money could, of course, be injected into the system from both sources. This might be quite appropriate in times of serious depression, but in ordinary times the likely result would be serious inflation—and inflation itself is yet another means of accelerating economic growth. It is useful, in many cases, to consider inflation as a form of tax. If the sole objective of policy should be that of accelerating growth, deliberate inflation of the currency might be a very effective device for forcing the saving necessary to accomplish this objective. But when other considerations are introduced, inflation becomes a singularly undesirable method, and, in addition, a method which is limited in effectiveness to rather short-run periods.

ECONOMIC GROWTH AS A POLICY OBJECTIVE

The preceding discussion has been sufficient to indicate that many fiscal institutions can be introduced which will either retard or accelerate economic growth. Real-world fiscal systems normally embody elements that tend to affect growth decisions in both directions. This fact alone suggests that economic growth cannot be the single overriding goal for actual policy. But even granting this, the

question remains as to the extent to which growth should be accepted as an explicit objective for fiscal organization. Should fiscal devices be deliberately introduced with a view toward affecting private decisions to save and to invest? If so, to what extent and in what direction?

There are reasons for suggesting negative answers to these questions, on grounds that are quite similar to those reached concerning economic efficiency as an objective in the preceding chapter. In a free society in which individuals are supposed to be the final arbiters, no single criterion of an "optimum" or "ideal" rate of progress exists. The most desirable rate would appear to be that which private decisions produce. This is not to suggest, however, that the effects exerted by fiscal institutions on these decisions should be overlooked. Other things being equal, economic growth is surely a desirable attribute of a society. When the same results can be accomplished in terms of other objectives while the rate of growth can be furthered, the appropriate changes should be carried out. Fiscal devices that seriously distort individual choices in the direction of retarding and slowing down economic progress should be seriously questioned before approval. The question should be asked as to whether or not similar objectives could be attained with effects less severe on the rate of progress. Extremely progressive rate structures should perhaps be especially examined on this score, along with some of the more obvious cases of discrimination against investment income.

But the coin has two sides. While fiscal institutions retarding growth should be examined carefully, fiscal institutions deliberately designed to accelerate growth should also be subjected to scrutiny. The favorable treatment of capital gains under the income tax and the provision for accelerated amortization should not be automatically justified by the argument that growth rates are probably increased by these devices. On balance, any fiscal system which embodies attempts to achieve simultaneously several mutually conflicting objectives will include distorting effects in both directions. This is as it should be. There seems to be no reason why economic growth should take precedence over other equally valid objectives for fiscal organization, and its proper place in the hierarchy of social goals seems best approximated by allowing the fiscal system to exert the minimum practicable effect on private choices in either direction.

CONCLUSIONS

Economic growth has become an important social goal, especially since World War II, and especially for the underdeveloped nations of the world. The fiscal system provides an obvious means whereby private choices concerning economic growth can be modified. The first question becomes that of determining how these decisions are made. With this in view, the process of economic growth was briefly sketched, and the way in which growth decisions in the no-government economy would be made was examined. Following this, the process of growth in the economy with an ideally neutral fiscal system was discussed. It was noted that many collective goods are at the same time capital goods. But real-world fiscal systems are not ideally neutral. Fiscal systems can embody devices that either retard or accelerate growth, and several of these were more carefully discussed. Finally, the legitimacy of using economic growth as a deliberate objective of policy was examined. It was concluded that the fiscal system should not be deliberately constructed so as to interfere with private choices in either direction, although it is recognized that some distorting effects must always be present.

Chapter 14 REDISTRIBUTION VIA THE FISCAL PROCESS

The fiscal process of taxing and spending provides a means through which the collectivity may redistribute real income and wealth among individuals and families. Any consideration of fiscal institutions must include an appraisal of such redistribution as a possible goal for organizational policy.

INCOME DISTRIBUTION IN THE NO-GOVERNMENT ECONOMY

As we have found on previous occasions, the subject may be conveniently introduced by reference to the economy in which the government provides no specific collective goods and services. We shall briefly sketch the principles of income distribution in the purely private market economy, operating within the constraints of broad general rules relating to contracts, property rights, and similar legal entities.

Resource owners in this economy will be rewarded on the basis of the contributions to production made by the resource services supplied. A unit of resource service will be priced so as to reflect its marginal contribution to total production in the economy. This proximate equality between marginal product and price will be insured by the competition among employers for resource services and competition among resource owners for employment. Income shares of individuals in this market economy are prices paid for productive services. The most important of these productive services is labor.

The income of a single individual or family group is determined by two things: the amount of productive services put on the market, that is, the quantitative amount of human or nonhuman resource services actually "sold," and the evaluation the market places on

these services. Both parts are essential. The amount of services supplied depends, in large part, on the amount "owned" or "disposable." The individual who is without either nonhuman resources in the form of capital which will earn income or the capacity to earn income from his own labor will receive no income in the purely market economy. But even the most talented musician in the world earns no income unless he supplies some services, that is, unless he performs, and the most talented blower of soap bubbles in the world will find it difficult to earn income no matter how much he performs. Individuals may possess a capacity to earn income through their ability to supply labor in any one of its many forms ranging from the lowest unskilled categories to the most talented artist. Quite similarly, individuals may possess a capacity to earn income through their ability to supply capital in any of its many forms. Money capital invested earns an interest or dividend income; real capital may be rented, leased, or sold.

In the pure market economy, individuals possessing neither of these capacities to earn income will not exist except through the private charity of other individuals. On the other hand, some individuals and families will probably be extremely wealthy and receive very high incomes. This becomes especially likely if separate generations are allowed to pass along wealth accumulations to each other. The actual distribution of the social product, the total real income, may involve significant inequalities among individuals and families. The distribution at any particular time will depend on numerous variables, among which chance must be accorded an important place. No generalized statement as to the proximate extent of the inequality may be made.

Insofar as the pure market economy does not work, the resulting income distribution will be modified. In the real-world economy, there are, of course, many departures from "ideally working" markets, even leaving aside positive government action. Monopoly groups, through various restrictive devices, may be able to secure an excessively large share of the total social product, reducing the income share of remaining groups. Nevertheless, the distribution of the total product in accordance with the marginal productivity of resource services would still prevail in a rough, general way. This would remain true when we introduce the government provision of collective goods and services, if these services are provided in the "ideally efficient" manner discussed in Chapter 12. If the government should provide collective goods and services on the basis of the analogy with

a market economy, the fiscal process would not, in itself, act to modify significantly the distribution of total real income in accordance with the marginal productivity principle.

THE ETHICS OF MARGINAL PRODUCTIVITY DISTRIBUTION

The payment of resource services in accordance with marginal productivity serves an essential purpose in the organized market economy. The prices of productive services tend to cause resource owners to shift resource units into those employments in which they are most productive, as determined by consumers in the nation's market places. On the other side, marginal productivity payment tends to cause business firms to combine resource services in such a way that final goods are produced at the lowest possible cost. For both of these reasons, marginal productivity payment of resources leads to a higher degree of over-all economic efficiency, that is, to a greater real national income. Insofar as a higher real income is a desirable goal for society, as it must be, marginal productivity distribution tends to have some ethical justification.

Other ethical ideals are, however, likely to overweigh the desire for increased real income in many circumstances. If, in fact, the income share of an individual or family in the market economy should be quite closely correlated with individual effort, productivity payment would be much more difficult to reject. Few individuals, even those with the lowest incomes, could object to wide disparities in the final income distribution if these were known to result largely from the free play of private choices. This point is widely overlooked, and it should be emphasized. A considerable share of any observed inequality in income and wealth distribution can always be explained as a result of private decisions. A useful way of putting this is as follows: Even if everyone started out his adult life with precisely equal capacities, that is, equal economic opportunities, the market system, by allowing full play for private choices, would produce significant inequality in measured income distribution in any given period of time. The richest men in this system would be those who choose to work the hardest, those who choose to take a greater risk of possible loss, and those who are simply lucky in choosing the right occupation, or the right investment for their capital. The poorest men in such a system would be those who prefer leisure to work, those who desire security rather than risk, and those who are unlucky in occupational and investment choices.

The facts are, however, that individuals do not confront genuinely equal economic opportunities. Therefore, much of the observed inequality in the actual distribution of economic rewards results, not from free private choices, but to an initial inequality of opportunities.

Equality of opportunity must be an important goal of any society professing adherence to democratic or individualistic principles of social organization. The idea of a free society imposing upon itself certain broad and general constraints within which private individual choices are to be allowed to operate more or less presupposes that the decision-making private units are afforded reasonably equal opportunities when the choices are made. There is, however, a vast gap between the general acceptance of equality of economic opportunity as a desirable social goal and general agreement on the degree to which deliberate governmental action to achieve this goal should be taken. Equality of economic opportunity is almost impossible to define rigorously, and, even if definition were possible, there would be wide disagreement on the means of attainment. Somewhat fortunately, full agreement either on definition or on means is not necessarily required when it is recognized that any attempt to promote equality of opportunity through government action runs into conflict with competing ethical goals. Hence, absolute equality of opportunity must remain as one, among several, conflicting aims of over-all social policy. Actual social decisions can rarely be expected to achieve the desiderata for any one of these conflicting goals taken independently.

What may we conclude from this brief discussion of the ethics of income distribution? Three separate criteria are present: (1) the maximization of national real income, (2) the equating of effort and reward, and (3) the equalization of economic opportunity. These three things are conflicting, and attempts to attain any one of them will cost something in terms of the others. Some compromise must be worked out that is generally acceptable.

REDISTRIBUTION THROUGH THE FISCAL PROCESS

Some redistribution, at least in a relative sense, seems to be generally accepted as a desirable social goal. If this is the case, the fiscal system provides the means through which such redistribution may be most readily accomplished. Quite apart from redistribution

as a purpose, the fiscal system must, in the real world, involve a coercive process that reduces the real incomes of individuals when taxes are collected and, in turn, increases the real incomes of individuals when expenditures are made. Recognizing this, the deliberate usage of the mechanism to accomplish the desired shift toward somewhat greater equality in the distribution of incomes and wealth requires a rather limited institutional change. There are, however, several means of using the fiscal system to achieve greater equality in income distribution. We shall find it useful to discuss each of these separately.

Education as a Means of Equalizing Economic Opportunity

If the fiscal system can be used to promote greater equality of economic opportunity, this would seem to be generally more desirable than direct redistribution of incomes and wealth among individuals. Expenditure on education comes to mind as one means through which the opportunities of individuals can be equalized, at least to a certain extent. As will be demonstrated when educational expenditures are discussed in some detail in a later chapter, there are reasons to suggest that public expenditure on education should take place quite apart from distributive aims or objectives. At this point it is perhaps sufficient to point out that the redistributive objective serves to complement other bases for public outlay on education.

The past century has witnessed a significant narrowing, and in some cases a reversal, of the gap or differential between the wages of manual workers and white-collar or clerical workers. This progressive equalization can be attributed, in considerable part, to the growth of public expenditure in support of universal education. In this way, public expenditure on education has served to obviate the necessity of direct redistribution of incomes through the fiscal process.

Direct and General Redistribution through Taxes and Subsidies

If the redistribution of incomes and wealth among individuals and families were to be accomplished independently of other purposes, the program would take the form of net transfers. Taxes would be imposed on those who are considered by the decision makers to be receiving excessively high incomes, and the proceeds would be used to pay subsidies (negative taxes) to those considered to be receiving

excessively low incomes. No collective or public goods or services would be financed in the process apart from the achievement of greater income equality which, in one sense, can itself be considered a collective service.

If the effects of this pure transfer process on the efficiency of the economy are to be eliminated, the taxes and subsidies must be once-and-for-all levies and payments, wholly divorced from individual behavior. In other words, both the taxes and subsidies must be of the lump-sum or capitation type distributed in such a way as to exert no influence on individual action. If a continuing redistribution is to be accomplished, tax levies as well as subsidy payments must be related in some way to personal incomes and wealth. Hence, some direct influence will be exerted on individual decisions to work, to save, and to invest. Continuing fiscal transfers must, in this way, run into conflict with economic efficiency.

Nevertheless, certain forms of tax subsidy schemes exert less influence on individual behavior than others. If the financial levies and payments are generally applied to all individuals in similar circumstances, the inefficiency aspects will be effectively minimized. Attempts either to avoid the payment of taxes or to increase the receipt of subsidies by shifting occupation, by changing geographic location, or by modifying consumption patterns will be prevented.

Direct Redistribution among Specific Groups

Fiscal means may be employed to effect transfers among groups in society in a nongeneral way. That is, redistribution policy may be wholly unrelated to a general policy of income or wealth redistribution. Taxes may be levied on individuals or families of a specific social class, occupational grouping, geographic location, or consumption category. Similarly, subsidies may be granted on almost any arbitrary basis.

This form of arbitrary fiscal discrimination is rarely encountered, however, on the tax side. Ethical standards, as well as legal institutions reflecting these standards, will tend to cause such discrimination to be rejected if proposed. On the expenditure or subsidy side, the situation is not so clear. Fiscal discrimination is widely practiced, thus presenting a peculiar asymmetry in fiscal tradition and practice to which we shall have frequent occasion to refer in subsequent sections. Subsidies may be granted to individuals because they are members of specific population groups or classes (for

example, veterans), because they are of a certain age (the aged), because they are members of an occupational group (farmers). These subsidies, when combined with taxation imposed more generally over the whole population, effect a net redistribution of income among social classes and groups in the economy.

Income redistribution of this form is not motivated primarily by a desire to equalize economic opportunities as such. Redistribution arises out of an attempt to provide specific classes with governmental assistance, presumably because these groups are alleged to be underprivileged or especially deserving of support. It seems doubtful that this sort of income redistribution would find widespread support if the tax and expenditure decisions were to be made simultaneously. This introduces a point to which we shall return in a subsequent chapter.

Indirect Redistribution through Discriminatory "Pricing"

The primary means through which income redistribution is promoted is by the "discrimatory pricing" of collective goods and services. If collective goods and services were "priced," that is to say, financed through taxes, in a way analogous to the pricing of private goods in the market economy, little effective redistribution would take place. Tax payments would approximate marginal benefits received from the public services, both for the whole group and for individuals considered separately.

As already shown, however, this method of taxation is not widely practiced and, at best, represents an extreme model which never could be closely approximated in the real world. Instead taxes are normally distributed among the people on some principle that allows tax payments made by individuals to be almost wholly unrelated to the benefits received by individuals from the public services provided. As a general rule, the high-income receivers pay higher "prices" for the public services than the low-income receivers. As a result, the income distribution is shifted toward greater equality.

This form of redistribution may be illustrated by means of an analogy with the private market economy. Price discrimination is not normal to the market economy, but it is found in certain monopolized industries. Medical care is ordinarily priced in a discriminatory fashion. An appendectomy costs the rich man $1,000 and the poor man $200. As a result of this pricing scheme, income redistribution

takes place. Both the rich man and the poor man are left without an appendix, but the income of the rich man is reduced *relative* to that of the poor man after the process. This is quite similar in effect to the whole tax-expenditure system. The ICBM provides a protection against war to all citizens alike. But the rich man may pay an income tax of $10,000 while the poor man pays only $100 in taxes to support national defense. The result is some shift of the after-tax income distribution toward greater equality, or at least less inequality.

This type of redistribution is characteristic of modern fiscal systems. Progressive income taxation is a major revenue source, and the major portion of government expenditure is for goods and services which are either beneficial to the populace generally or are peculiarly beneficial to the lower-income classes. National defense, which looms as all important in any consideration of federal government expenditure, is the single best example of a public service that is generally beneficial, while the whole group of social welfare expenditures provide examples of the second type.

Modern fiscal systems, in this way, combine in a single process both the redistributive and the allocative function. Instead of a direct and purely redistributive transfer being superimposed onto an ideally efficient provision of collective goods and services, the latter are financed in such a fashion that the desired redistribution is, in fact, accomplished. This procedure has major disadvantages. The decision concerning the correct or efficient amount of public goods and services to be provided cannot be made rationally since it is not considered independently of the decision concerning how income shall be redistributed. Actual decisions may be biased either toward too much or too little public provision of goods and services. For those individuals expecting to receive a differential gain from the redistributive aspects of the fiscal process, decisions will tend to be biased in favor of too much government. For individuals expecting to receive differential losses from the redistributive aspects of the process, the decision will be biased in favor of too little government.

The amount of redistribution actually accomplished through the fiscal process is extremely difficult to estimate since it depends upon assumptions made about the final incidence of taxes and public services. Estimates have been made which indicate that the lowest income groups may gain more than 50 per cent in real income as a result of the fiscal process. Statistical accuracy in such estimates must always be seriously questioned due to the tremendous uncer-

tainty surrounding many of the variables. Nevertheless, there seems little doubt that substantial redistribution is accomplished in the United States, especially through the federal fiscal system.

If the public or governmental sector of the economy continues to grow, both relative to the private sector and absolutely, an increasing amount of redistribution will more or less automatically take place. This conclusion is based on the presumption that collective services will continue to be financed in roughly the same way as they are now. This suggests that the direct promotion of greater income equality as a social goal need not loom as important as heretofore. In a genuine sense, relatively greater equality will be produced by a continuation of trends now in evidence. The redistributive process is now an accepted part of the modern fiscal structure. Therefore, the problems of securing greater efficiency in the use of resources, both currently and for the future growth of the economy, will probably become more important as criteria for fiscal organization. This conclusion is reinforced when the growth of the economy itself is taken into account. As the general level or standard of living rises, and as absolute poverty is eliminated, the social importance of absolute differences in income and wealth among individuals diminishes sharply. It seems quite possible, therefore, that the fiscal system over the next quarter century can be less oriented toward income redistribution and more toward efficiency in the allocation of resources between the public and the private sectors of the economy and toward efficiency in the utilization of these resources.

REDISTRIBUTION BY NONFISCAL MEANS

If income or wealth redistribution is desirable, the carrying out of such redistribution through the fiscal system is much more effective than alternative methods. Differential taxes and benefits can be superimposed on an operating market economy; the effects on individual behavior are largely indirect. On the other hand, direct attempts to influence the distribution of income received in the market economy must affect individual decisions to a significantly greater extent. The cost is greater in terms of inefficient utilization of resources. But, in addition, there is no real assurance that direct methods will achieve the redistribution desired.

Numerous examples could be employed to illustrate the redistributive ineffectiveness of direct interferences with market processes. Minimum-wage laws provide perhaps the best of these. Such laws are supported on the argument that the effects will increase the over-

all equality of income distribution, because the wages of the lowest income workers will be increased. But it is clear that, if the minimum wage is at all effective, those workers with the lowest productivity will either be thrown out of work or forced to shift to occupations not covered by the law. In either case, their real incomes will be lowered rather than increased. The effects may be to increase the incomes of some wage earners who remain employed, but the achievement of greater equality in over-all income distribution is not necessarily produced, and the whole wage-setting process in the labor market is seriously affected by the wage floor imposed. Numerous similar examples could be used to make the point, but the analysis is clear enough. If redistribution is the primary purpose, this can be much more efficiently carried out by a tax-benefit system than by a *direct* interference with the market process. In the case discussed here, if the lowest wage workers are to have their real incomes increased, a system of subsidy payment supplementing earned incomes and financed out of general tax revenues will accomplish this purpose more certainly, and without undue interference with ordinary operation of the market economy.

CONCLUSIONS

The free enterprise economy distributes real income produced in accordance with the principle of marginal resource productivity. Resource owners tend to receive income roughly equivalent to the marginal contribution of resources put on the market. Despite the many departures from the perfectly working market economy that are present in the United States, the distribution of real income in the private economy can still be said to be based on the marginal productivity principle in a first approximation.

The exclusive reliance on marginal productivity distribution of real income would be unacceptable to many people in the modern world. The need to modify this distribution in the direction of achieving greater equality in personal incomes and wealth has been widely recognized for many years. The fiscal system provides the appropriate mechanism in the modern economy through which some redistribution can be effected. This redistribution can be carried out in several ways with differing effects. Purely redistributive measures consist of net transfers among individuals or groups. These transfers can be generally imposed on such criteria as income or wealth, or they can be quite specifically imposed on arbitrary criteria. A more

important way in which the fiscal system affects income distribution is by a system of discriminatory "pricing" for collective services. Tax payments are not directly related to the marginal benefits received by individuals from public services, with the result that greater equality in real income is produced more or less as a side effect of the ordinary fiscal process.

As the economy grows both in the public and the private sector, the place of redistribution as a direct goal of fiscal policy will probably diminish in relation to other criteria. This prediction is based on the idea that more redistribution will, in fact, be carried out by a continued extension of the role of the public sector, and upon the idea that absolute inequality in income and wealth becomes less important as the general level of living rises and as poverty is effectively eliminated.

If income redistribution is accepted as a social goal, it is considerably more efficient to achieve this through the fiscal process than through alternative methods. These alternative methods will normally take the form of direct interferences with the market economy. Not only will over-all efficiency in resource use be reduced to a greater extent, but there is no assurance that the desired redistribution will be achieved at all.

Chapter 15 TRADITIONAL PRINCIPLES OF PUBLIC FINANCE

We have discussed economic efficiency, economic growth, and income equality as possible goals for organizing a fiscal system. These goals are, of course, conflicting, and, even if these were the only guides, any actual fiscal structure would represent a rough compromise. But existing fiscal systems have not been organized on the basis of these criteria, even if the many nonrational aspects of institutional history are wholly disregarded. In other words, the principles of economic efficiency and greater income equality have not been explicitly followed, even as principles, in the pattern of development of fiscal institutions. The results are, in many cases, surprisingly similar to those which might have emerged from a more rigid adherence to such principles. But in order to understand existing fiscal institutions we must examine now the set of principles that has been explicitly proposed for fiscal organization in the past, because these principles have influenced, and continue to influence, public thinking on current policy issues, and, through this, policy formation itself. This chapter, therefore, will be devoted to a brief review of what may be called the traditional or orthodox principles of public finance.

THE FUNDAMENTAL FISCAL ASYMMETRY

As mentioned earlier, a rather singular asymmetry has been present in the development of both fiscal principles and institutions, especially in Anglo-Saxon countries. We find that tax legislation has been discussed in terms of the various "principles of taxation." But we find extremely little discussion until quite recently on "principles of public expenditure," and, when such principles are found, they are based on a wholly different philosophical conception of the state.

This asymmetry seems to stem from an early misconception by the classical economists. Public expenditures were assumed to be wholly unproductive; therefore, the task of public finance theory was that of showing how the necessary tax load could be distributed so as to cause the least possible damage to the private economy. Hence, "principles of taxation" were developed which have provided certain rough norms for the distribution of the tax load among individuals and groups. No attention, or almost none, has been paid (again until quite recently) to the relatively more important question concerning how much the tax load should be, that is to say, how the total resources of the economy should be divided between the public and the private sector. Both the amount and the distribution of public expenditures have been, by and large, considered as being determined outside the limits of public finance as a subdiscipline of economics. Some writers have explicitly stated that these decisions are to be taken as political in nature and, presumably, not subject to reasoned discussion and analysis. The same logic could, of course, be applied to the distribution of taxes. All problems in public finance are political since they directly involve some decision making by the collective authority. But this is no reason why objective discussion and analysis cannot be helpful to those who do ultimately decide on policy, and the exclusion of public expenditure norms has severely and unduly limited the usefulness of traditional public finance theory.

THE EQUITY PRINCIPLE

One of the most widely accepted principles or norms for the distribution of taxes among individuals states that *individuals in similar situations should be treated similarly* or, in other words, *equals should be treated equally*.

The origin and general acceptance of this principle in democratic societies is not difficult to explain. Its source is the principle of the equality of individuals before the law, tax treatment being legal treatment in essential respects. Arbitrary and capricious treatment of individuals by legal institutions is prevented by constitutional law, and this constitutional protection against arbitrary or discriminatory treatment by government has been extended to apply to the distribution of taxes.

On ethical grounds, little objection can be raised to the equity principle. Arbitrary taxation of particular individuals would violate the value sense of most members of modern Western society. The

difficulty with this principle lies in its effective application to cases beyond the agreed and obvious limits of discriminatory treatment. Just who are equals? The principle itself does little toward suggesting those attributes of equality or similarity that are to be relevant in distributing taxes. Taxation based on certain types of discrimination appears acceptable; taxation based on other types of discrimination appears unacceptable. But the dividing line is not at all clear, and in many particular instances distinction is impossible.

The imposition of equal taxes on all individuals would, in one extreme sense, seem to fulfill the equity criterion. But an important corollary of the equity principle is that *unequals should be treated unequally*. And equal taxation of all individuals would violate this corollary criterion.

Certain traditions seems to have been established concerning the appropriateness of classifying individuals for tax purposes. Tax discrimination based on incomes or wealth is widely accepted. Also, tax discrimination on the basis of the consumption of particular products or services is not held to violate the equity principle. These appear to be *reasonable* classifications, broad enough to contain many individuals within each grouping, the reasonableness in each case being determined finally by constitutional procedure.

The equity principle is held to be satisfied when the over-all classification into categories is reasonable, and there is equal treatment for equals within each category. Since 1913 in the United States, discrimination in the rate of tax on the basis of income (progression in the income tax structure) has been held constitutionally legal, and, presumably, ethically acceptable. Tax differentials based on the source of income are widely used. In Great Britain, for example, so-called "earned income," that is, income from work, is not so heavily taxed as income from investment. The corporation income tax in the United States differentially imposes a burden on individuals receiving income from capital. Property taxation has the same effect. Commodity taxation differentially burdens individuals of particular consumption habits. Tobacco taxation, for example, imposes a cost on the smoker relative to the nonsmoker. In certain cases, differential taxes are imposed on specific occupational groups (for example, gamblers).

The broad acceptance of the equity principle seems to prevent particular individuals or small groups from being subjected to differential tax treatment. A tax levy upon the residents of a particular urban street would be held unconstitutional unless the revenues should

be devoted to the improvement of that street. A tax base defined so as to include only one individual would clearly be unacceptable, for example, a tax on all redheaded men over fifty years of age working as attendants in a particular drive-in theater. Criteria of reasonableness would also preclude taxation based on racial, religious, or geographic groupings.

The primary objection to the application of the equity principle lies in the fundamental asymmetry discussed previously. The equity principle has never been applied to the distribution of public expenditures, although the reason for such application would seem equally valid. Limitation to the distribution of taxes stems from the implied assumption that public expenditures are wholly unproductive or else benefit all groups equally. If differential benefits to separate individuals and groups are recognized, there is little grounds for the application of the equity principle on the tax side. Or, considering the problem from the other extreme, there is equal justification for applying the equity principle on the expenditure side. Actually, fiscal systems exhibit rather arbitrary discrimination in expenditure distribution. Particular occupational groups are differentially provided with subsidies (for example, farmers), and residents of particular geographic regions (for example, the Rocky Mountain states) are differentially benefited. The provision of public service to an individual or family does not imply any legal or ethical claim of all individuals equally situated to receive the same service. Because a federal government irrigation project differentially benefits landowners in one valley, farmers in adjacent valleys are given no legal claim for similar treatment.

An attempt to extend the equity principle to apply to the expenditure side in a way similar to its application on the tax side would stifle many public expenditure programs. A more useful development would appear to be a recognition that differential expenditure justifies differential taxation, and that the equity principle is acceptable only for the distribution of those taxes required to finance genuinely general public expenditures.

THE ABILITY-TO-PAY PRINCIPLE

A corollary of the equity principle states that *unequals should be treated unequally*. But the question as to how the total tax bill shall be distributed among the different classes and groups of taxpayers presents many difficulties. To what extent shall discrimination in

tax rates among separate classes and groups of the population be accepted?

One thing requires stating at the outset. There are no agreed-on or widely accepted answers to these questions. Different experts disagree, even if this is recognized as a field where expert opinion is better than any other, a highly questionable recognition in itself.

Nevertheless some decisions must be, and have been, made in distributing taxes among separate groups. These decisions have not been made on the basis of purely expedient considerations. Some "principles" have been used, at least in the discussions of alternative tax programs.

The single principle that has been most widely accepted in the modern fiscal system states that taxes should be distributed in accordance with the ability of the individual to pay. This has been a very effective principle because it provides a rough guide to tax policy without at the same time specifying precisely the actual distribution to be adopted. Within the limits of this principle, many conceivable tax distributions can be, and have been, adopted.

Ability to pay has normally been measured by incomes and wealth. The higher the income of an individual, the more able is he to pay taxes; similarly, the greater the amount of wealth possessed, the higher the ability to pay. This preliminary definition of ability to pay suggests that, in any distribution of the tax load, taxes paid must vary directly with incomes and wealth.

But this preliminary definition does not get the tax commission very far in planning its tax program. The hard question remains: How much more should the rich man pay? The imposition of tax rates proportional to income would guarantee that the rich pay more than the poor. For example, a tax rate of 10 per cent would take only $100 from a net income of $1,000 and $1,000 from a net income of $10,000.

Ability to pay has been defined more specifically than this, or rather, attempts have been made to define it, so as to justify progressive taxation. That is to say, it has been argued that the ability-to-pay principle has not been met unless the high-income groups pay proportionately more than the lower-income groups. For example, the $10,000 net income must be taxed at, say, a 20 per cent rate in comparison with the 10 per cent rate on the net income of $1,000.

Several so-called "theories" have been developed to justify income tax progression. The most sophisticated of these, and the only one which necessarily points toward a progressive rate structure, is the

principle of minimum aggregate sacrifice. This approach assumes, first of all, that individual satisfaction or utility is a measurable magnitude and, more significantly, that this magnitude is comparable among separate individuals within the social group. An implication of this assumed measurement is that the maximization of total utility for all individuals is an appropriate goal for social policy.

Here, again, all public expenditures have been assumed away, so to speak, and the principle applied only to the tax side of the account. If public expenditures are considered to constitute always net drains on the private economy, the conceptual framework here suggests that taxes should be so distributed as to cause a minimum reduction in total utility of all individuals jointly considered. Hence the name, *principle of least sacrifice* or *minimum aggregate sacrifice.*

Before the principle can lead to an actual distribution of taxes, some assumption must be made about the change in individual utility as income changes. Here the more normal assumption is made that total utility enjoyed by each individual increases at a decreasing rate as more income is received. Or, in other words, the marginal utility of income declines as more income is added. The extra dollar provides the man with $1,000 less additional enjoyment than was provided him by the 999th dollar. Therefore, if individual utilities may be compared among persons, the collection of a dollar in tax from the high-income receivers will reduce their total satisfaction less than a similar collection of a dollar from the low-income receivers. Hence, the major portion of the tax bill must be placed on the high-income classes. Incomes must be leveled down by taxation in order to meet fully this principle.

Modern economic thought does not accept this principle as possessing any validity. First of all, individual utility is not now considered to be a cardinally measurable magnitude. Even if it were, utilities could not be compared among separate individuals. This fact alone prevents the principle from having any "scientific" basis whatsoever.

The ability-to-pay principle can lead to no specific configuration of taxes apart from the simple proposition that higher-income receivers should pay higher taxes. Progression in the rate structure must be defended on quite other grounds. Nevertheless, it should be fully recognized that the false correlation between ability to pay as a guiding principle and progression in rates as a policy continues to exert important influence on the thought of policy makers.

Progressive tax rates, based on income, must be defended more explicitly in terms of the goal of greater income equality discussed in Chapter 14. If the pattern of progression in taxes is more progressive than the pattern of real benefits from public expenditure, the fiscal system will cause a more equal distribution of real income to be achieved. This aspect of progressive taxation should be stated as such, and the pretense of using the rather meaningless ability-to-pay principle leads only to confused discussion on tax policy.

At its best, the ability-to-pay principle can provide some very rough guideposts to the distribution of a *given* or *predetermined* tax load. It offers no guidance at all in the more important fiscal decision: How much should the tax load (and public expenditure) amount to? Again we find the asymmetry that we have so frequently mentioned.

THE BENEFIT PRINCIPLE

An alternative principle for the distribution of the tax load among separate individuals and groups states that tax obligations should be based on the *benefits received* from the enjoyment of public services. At the outset it should be noted that this principle has the logical advantage of tying together the collective decisions on taxes with those on public expenditures. The whole fiscal process is incorporated, and a comparison between taxes and expenditures becomes possible.

But the benefit principle, as stated previously, remains ambiguous. Several interpretations may be placed on the principle, and it will be useful to discuss each of these in sequence.

The first, and least acceptable, interpretation of the principle states that the *total* tax bill for each individual should be equated to the *total* real benefits that the individual receives from the provision of public services. This interpretation is clearly misleading; there should be, in all cases, a sizable "taxpayers' surplus" left over in terms of real benefits after all tax obligations are met. For example, it is evident that the total benefits provided by the availability of a municipal police force are far in excess of the *total* cost of providing the police protection. The benefit principle of taxation should never be stated in *total benefit* terms. To do this is to repeat the age-old confusion in economic thought between value in use and value in exchange.

A second interpretation of the benefit principle states that taxes should be distributed *proportionately* with total benefits received.

The tax obligation to be charged to a particular individual depends, in this formulation, on the total benefits enjoyed, but need not be equal to this total. If some "taxpayers' surplus" is produced through the fiscal process, each individual taxpayer may expect to find his real income increased as a result of the combined tax-expenditure process. This version of the benefit principle has some merit in the abstract if the total public expenditure (and tax load) is determined independently outside the fiscal decision process itself. But, even in these cases, no possible means would seem to exist, even conceptually, of measuring total benefits and of allocating tax obligations proportionately to these.

A third interpretation of the benefit principle is the most appropriate, especially from an analytical point of view. This states that taxes should be allocated among separate individuals on the basis of *marginal benefit* or *incremental benefit* received, not total benefit. The principle, stated in this manner, involves the setting of taxes in a way that is strictly analogous to the setting of prices in the private market economy. This process has already been discussed in some detail in Chapter 12. The ideally neutral or the ideally efficient fiscal system that was discussed there incorporates taxation in accordance with the principle of incremental benefit. A particular individual would be required to pay a "tax price" for each unit of a given public service which is equal to the marginal or incremental benefit that he receives from a unit of this service. This appropriately set "tax price" would be independent of total benefit received from all units of the public service.

This version of the benefit principle allows the total amount of public services to be conceptually determined. Thus, it is the only "complete" principle in a methodological sense. If each taxpayer is paying for each public service on the basis of the marginal benefits actually enjoyed, the total tax collection from all individuals provides a useful measure of the marginal evaluation of the public service. The provision of this service can then be extended so long as this total marginal evaluation exceeds the marginal cost of providing the service. Again, a simple two-man example may be used to clarify this point. Suppose our island society with Crusoe and Friday, and suppose further that the decision to be made concerns whether or not to build the lookout tower two feet higher than it is at present, the tower being a collective good. If Crusoe estimates that the *marginal benefit* of the additional two feet in height will be 10 days' labor, and Friday estimates a *marginal benefit* of 5 days' labor, the addition

should be made if the cost is less than 15 days' labor, and taxation is based on the principle of marginal benefit. If, on the other hand, the cost should be 20 days' labor, no distribution of taxes could possibly be justified. The addition should not be undertaken.

As concluded in Chapter 12, a fiscal system that incorporates the principle of marginal benefit is useful as a conceptual model. It allows a "solution" to the collective choice process to be defined that is "efficient." But when we come to consider real-world fiscal systems, the principle of marginal or incremental benefit provides little assistance. Decisions as to the total amount of expenditure and as to the distribution of taxes must be made, and policy makers cannot "read" individual evaluations of public services. Furthermore, as Professor Paul Samuelson has emphasized, individuals, if they are to be taxed on the marginal benefit principle, will have a strong incentive to conceal their true evaluations from the decision-making authorities.

It is possible, however, that basic changes in the institution of decision making itself could allow a reasonably close approximation of the principle of marginal benefit to be achieved. This is the plan suggested by the famous Swedish economist, Knut Wicksell, that has already been briefly discussed in Chapter 12.

But there are fundamental objections to the application of the marginal benefit principle, even if the difficulties of introducing it as the basis of a real-world fiscal structure are completely ignored. These objections stem from the conflict between the norms of "efficiency" and "greater income equality" that have already been discussed. The principle of marginal benefit is, conceptually, the appropriate "principle" of public finance if the only aim of the fiscal structure is to provide collective goods and services efficiently. But it is clear that some shift in the pattern of income distribution is also accomplished through the modern fiscal process, and this redistribution is not accidental. Redistribution is a sought-for result. Conceptually, it would be possible to separate the fiscal process of redistribution from the process of providing collective goods and services. But, politically, this is not conceivable. Fiscal decisions will incorporate both the aims of efficiency and greater income equalization. Therefore, the principle of marginal benefit cannot be fully applied.

The limitation on the applicability of the principle of marginal benefit can best be illustrated in reference to the social service expenditures. Quite clearly the greatest marginal beneficiaries from relief payments are the recipients of the payments themselves. But the

whole purpose of the relief payment scheme would be defeated if these marginal beneficiaries should be taxed. The scheme is primarily one of redistributing incomes, not that of providing collective goods and services. Whenever the redistributive purpose is at all important, the principle of marginal benefit in the distribution of the tax load breaks down.

However, an important application of the marginal benefit principle remains which is applicable to certain aspects of the tax structure. The principle of *differential benefit* from *particular* public services may be helpful in imposing special taxes. This principle does more or less dictate the range of special levies that are to be found in the tax system. If particular consumers of a commodity are held to receive some special benefits from government, it is appropriate that the taxes required to finance this service be imposed on these consumers. In this way, the financing of the highway system by gasoline and motor vehicle license taxes has been justified, and this has become an important part of the over-all fiscal system of the United States. This use of the benefit principle is applicable when no redistributive purpose is desired. Thus, special assessments are imposed on residents of particular urban streets to finance street improvement or sewer line connections. License fees of all sorts are charged to finance the administrative costs of providing particular services.

CONCLUSIONS

Three major principles of public finance have been discussed. But traditional public finance theory has been characterized by a fundamental asymmetry. "Principles" have been developed primarily in regard to the distribution of taxes among individuals, and the distribution of public expenditures among separate individuals and groups. Little attention has been paid to "principles" for the determination of the appropriate amount of resources to be devoted to public as opposed to private uses.

The principle of equity states that equals should be treated equally. This principle has been widely applied in the distribution of taxes, and its acceptance in legal institutions has prevented arbitrary discrimination among individuals and groups. But the line between arbitrary and nonarbitrary discrimination remains ill defined, and little attempt has been made to apply the same principle to expenditures.

A corollary to the equity principle states that unequals should be treated unequally. Incomes and wealth have been generally ac-

cepted as a basis for distinguishing groups. But the difficult question concerns just how unequal the treatment shall be. The second major principle discussed embodies an attempt to answer this question. The principle of ability to pay suggests that tax rates should vary directly with income and wealth. But the principle has also been used to justify progressive tax rates in relation to income. This extension of the ability-to-pay principle is not supported on scientific or analytical grounds. The justification of progressive taxation must rest on a desire to achieve greater income equality through the fiscal process. The ability-to-pay principle cannot be at all helpful in determining the appropriate amount of public expenditures to be undertaken.

The third principle discussed was the benefit principle of taxation. This principle has several interpretations, and much confusion has been based on failure to distinguish these. The most acceptable of the interpretations states that taxes should be allocated among individuals in accordance with the marginal or incremental benefits received from government services. This is the principle incorporated into an "ideally efficient" fiscal system that was previously discussed. The principle does have the advantage of providing a complete solution to the collective choice process; tax and expenditure decisions are tied closely together. But the principle of marginal benefit cannot be applied to those fiscal decisions in which greater income equality is an important goal of policy. The principle has its greatest applicability in the real world for those fiscal decisions incorporating differential taxation on groups differentially benefited by public services where such groups have no claim for additional real income on distributional grounds.

The traditional "principles" of public finance leave much to be desired in the way of providing a set of norms upon which fiscal decisions may be made. The fundamental asymmetry has caused the principles to be confused and, in many cases, misleading. Nevertheless, such principles as ability to pay have been important in shaping public attitudes, and, because of this, the student can neglect them only at the peril of failing to understand the existing fiscal process.

Norms for organizing the fiscal structure must reflect the existence of competing goals. The analytical apparatus of the economist can do little more than to indicate the results of alternative proposals. Attempts to make norms "scientific" are doomed to failure; but given an explicit statement of criteria for fiscal organization, much progress may be made toward developing genuine "theories" of public finance.

SUPPLEMENTARY READING

For a more advanced discussion of both the ability-to-pay and the benefit principles the student may consult R. A. Musgrave, *The Theory of Public Finance* (New York: McGraw-Hill Book Co., 1959), chaps. 4, 5.

Chapter 16 FISCAL INSTITUTIONS AND COLLECTIVE "RATIONALITY"

At the end of Chapter 2, it was stated that only in one later chapter would an attempt be made to specify norms or criteria for fiscal organization. In Chapters 12 through 15, various norms have been discussed, and these have been shown to conflict with each other. But the balancing off of these conflicts is not the proper task for the student of public finance. The ultimate decision makers must choose how much efficiency shall be sacrificed to secure greater equalization in incomes, how much economic growth shall be promoted at the expense of either equalization or efficiency, and to what extent stabilization criteria override all of these other goals. The student of public finance has as his only function the demonstration of the results of alternative courses of action.

THE CRITERION OF RATIONALITY

In this chapter we shall, however, try to be somewhat more specific in defining certain "principles" for fiscal organization. This becomes possible because here we deliberately *abandon* all attempts to choose among the various social goals which might be accepted as objectives of the fiscal system. The argument is developed from a very simple premise. *Collective choices that are to be made should be as rational as possible.*

Several aspects of this premise require clarification. Why should this approach be more acceptable than that which postulates greater income equality as a social goal? The answer may be best suggested by an analogy with the choice making of the individual consumer. In a free society the individual is considered to be the best judge of his own interests. Hence, the student of consumer behavior cannot provide any assistance if he tries to decide "for"

the individual consumer the criterion upon which his choices shall be made. But the specialist student of consumer behavior can provide some assistance if he limits himself to showing to the individual the results of alternative choices. In this matter, he can help the consumer, quite independently of the criterion upon which the individual actually bases his choices, to be a more "rational" chooser. The role of the student of the fiscal process is quite similar. By analyzing the results of alternative courses of action, he is assisting the ultimate decision maker, be he voter, bureaucrat, or legislator, in reaching more "rational" decisions. But, for the student of the fiscal process, one additional step may be taken. He first analyzes the results of alternative courses of action *within a given institutional framework*. But as a second step, he also is able to analyze this institutional framework itself with a view toward modifying it in such a way as to increase the "rationality" of decision making. In developing "principles" for fiscal organization, the student can recognize fiscal institutions as *variables*, and he can suggest changes in the direction of making collective choices on fiscal matters more "rational." Hence, the student can divorce himself completely from the decision concerning how taxes and expenditures are to be distributed among individuals and groups but still develop certain criteria or norms for fiscal policy. His concern is not with the social aims to be promoted, but with the "rational" promotion of whatever aims the group, acting collectively, chooses to select.

The distinction between this approach to the construction of norms or "principles" for fiscal organization and that approach traditionally followed should be made quite clear. Traditional "principles" of public finance have been aimed at providing some guide for the final distribution of taxes and expenditures among individuals and groups. Basic to this approach is the idea that some "best" distribution exists, defined independently of the distribution that is actually chosen. Partly for this reason, the traditional principles of public finance have been discussed without reference to the political structure. If there is a single "best" way of organizing taxes and public expenditures, the "principle" indicating this "best" way may be applied to the fiscal problems of dictatorships or oligarchies as well as of democracies. If, however, the quest for any single "best" distribution is abandoned, and attention is concentrated on the rationality of the decision-making process itself, the political structure becomes all important. The approach taken in this chapter suggests that the fiscal system is "best" that is *chosen* by the collectivity, *pro-*

vided that the process of choice is as "rational" as is institutionally possible.

To this point, the word "rational" has been included in quotation marks because its meaning requires some discussion. Collective choice is defined as being more rational if the individual participants in this choice act more rationally. Collective choices must always be made by individuals as the actual choosing agents, in some capacity or other. Also, in application to individual decisions on collective or social issues, rationality is defined more or less in the ordinary usage of the term. Choice is more rational if the individual is better informed as to the range of alternatives confronting him: it is more rational if the results of alternative courses of action are fully known and predictable; choice is more rational if separate decisions are consistent with each other.

THE PROCESS OF FISCAL CHOICE

Further elaboration and development of the "principle" embodied in the approach taken here requires examination of the process of choice, the manner in which collective decisions on fiscal matters are reached. This process will vary directly with the configuration of the political structure. The process of reaching fiscal decisions in other than democratic societies will not be discussed; therefore, the discussion that follows will be limited to those collective choice processes commonly characterized as "democratic." That is to say, we shall examine the way in which fiscal decisions are made in societies where the individual voter, through his control of representative assemblies and administrative bureaucracies, retains ultimate sovereignty, to a greater or a lesser degree. From this examination, we shall try to develop certain rather specific criteria for fiscal organization, that is, for taxes and public expenditures, quite apart from the final distribution that the collectivity desires to accomplish. The criteria here developed apply only to the *means* through which the collectivity shall attain its purposes, and not at all to the purposes or ends themselves.

THE CRITERION OF CERTAINTY

This approach suggests that the individual citizen, as a taxpayer and the ultimate recipient of benefits from public services, should be as fully informed as possible concerning the real tax burden to which he is actually subjected and the real benefits from public

services that he enjoys. The more informed, or the more certain, the individual can be of these magnitudes, the more rational his decision on fiscal matters is likely to become. In this way, we may reintroduce one of the traditional principles of fiscal organization, although it has normally been a subsidiary one. Fiscal scholars have for many years included the certainty criterion among the whole set of desiderata for tax structures.

The rather simple proposition that the individual should be as fully informed as is possible concerning the real tax burden to be placed upon him implies several norms for fiscal organization. First of all, the proposition suggests that *direct* taxation is to be preferred to *indirect* taxation, as a general rule. Almost by the definition of the terms, direct taxes are imposed on those individuals who are expected to be the final taxpayers. *Incidence* is defined as the final resting place of the tax burden. The incidence of direct taxation is supposed to rest on those individuals who actually pay the tax to the government. On the other hand, indirect taxation is defined as that process of taxation in which the actual or nominal taxpayer does not support the real incidence of the tax. The process of tax shifting takes place, and is expected by the policy makers to take place, under indirect taxation. For example, the actual payers of the cigarette taxes are the tobacco companies. But a large part of the final incidence must rest on individual consumers of cigarettes. Legislators know this when they impose the tax. It is clear that the more tax shifting that takes place. the more indirect the tax actually is, the less informed is the final individual taxpayer concerning the real amount of the tax load placed upon him.

In a quite similar way, we can arrive at the conclusion that taxes with a final incidence that is certain and known are preferable to those which have an uncertain and unpredictable incidence. If the individual citizen does not know whether or not he is being subjected to the final burden of a specific tax, he may, in making his ultimate choices concerning the public use of resources, choose on rather arbitrary grounds. And his decision may be biased in either direction. He may consider himself to be paying more for government services than, in fact, he is. Or, equally likely, he may consider himself to be securing the advantages of government more cheaply than he actually is doing. In either case, a shift from taxation with an unpredictable pattern of incidence to taxation with a predictable pattern is to be preferred on the rationality principle here applied.

It is somewhat more difficult to apply the certainty criterion to the distribution of public expenditures. Taxes are levied in order to finance specific public services in the usual case. Hence, whereas taxation reduces real incomes of individuals generally, the provision of public services adds to the real income of individuals in specific ways. In other words, taxes are measured in terms of generalized purchasing power; public services take the form of specialized real income, measured in unique units. For this reason, the criterion of certainty which allows us to state that direct taxation is to be preferred to indirect taxation does not apply in the same way to expenditure. What is *direct* public expenditure? The analogy with the tax side would be fully applicable only if the sole purpose of the fiscal process was that of redistributing incomes. Where the purpose of fiscal activity is to provide genuinely collective services (lighthouses, national defense), public expenditures for such services must be considered *direct*, if this term is to retain any meaning at all.

The certainty criterion will be helpful here only for those expenditures which largely embody a redistributive purpose. Here the *direct* expenditure is greatly to be preferred over the *indirect* expenditure. If a particular group in the economy is to be subsidized on distributional grounds, it is much better to provide members of this group with direct income subsidies (negative taxes) than to attempt to accomplish the same purpose indirectly by subsidizing the production or consumption of particular commodities or services. For example, if the farmers, as a group, are to be subsidized because they are poor, they should be provided income subsidies rather than subsidized through government expenditure in order to keep prices of agricultural commodities high.

TAXATION AND EXPENDITURE DECISIONS

The decision-making approach to fiscal principles suggests that the citizen be allowed to make taxation and expenditure decisions simultaneously. Quite clearly, if collective decisions concerning the amount of resources to be devoted to public uses are divorced from decisions concerning the distribution of the costs of these resources, the individual chooser cannot possibly make a rational decision. Many traditional works in public finance state that the total amount of resources to be devoted to public purposes is politically predetermined, and that the sole task of public finance, as a separate study, is to indicate how these resources shall be financed, that is, how the real costs shall be distributed among individuals and groups. But

this is obviously too limited a view. The most important collective decision, that of choosing the proportion between collective or public and private usage of resources, is deliberately excluded. If we consider the decision-making process in democratic societies, it is essential that we place major emphasis on this central fiscal decision.

Existing fiscal institutions reflect, to some extent, ideas born in an era when all public expenditures were considered to be wholly unproductive and wasteful. If this were true, the sole function of public finance, as a study, would be to analyze the distribution of the costs of these wasteful expenditures. But it is quite clear that if all public services were wholly unproductive, democratic societies would choose to pay no taxes and enjoy no services provided by government. Public or collective services are obviously as productive in the abstract as are privately provided services; therefore, public finance must study more than the distribution of taxes. A public decision to undergo the burden of taxation must indicate, in some rough way, that the costs are outweighed by the benefits promised.

The failure of existing institutions to relate adequately the decisions on taxation and on the extent of public spending has given rise to two separate, and opposing, commonly accepted public attitudes. The first is that all taxation is somehow to be avoided. Taxes are viewed in their negative sense only, and democratic representative assemblies are notoriously reluctant to increase tax rates because of the alleged unpopularity of tax increases. Paralleling this attitude, the public has come to consider public spending to be costless, especially since the 1930's, and government services of all sorts to be relatively free. Thus, political parties that promise greater amounts of public services to the people have been spectacularly successful in securing voter support over the past quarter century. Both of these attitudes are, of course, erroneous, and both stem from a common source—the failure of the existing institutions through which fiscal decisions are actually made to force decision makers to weigh the real costs represented by taxes against the real benefits represented by the public services. The failure of decision makers to consider these two sides of the fiscal account simultaneously must lead to a continuation of these wholly opposite public attitudes.

Professor Galbraith, in his popular book *The Affluent Society*, argues that "social imbalance" is produced because the reluctance of representative assemblies to adopt new and higher taxes causes the public sector of the economy to grow at substantially less than some "optimal" rate. Looking at the fact that the public sector has

grown proportionately at a much greater rate than the private sector, I would be inclined to urge the opposite—that the failure of the public to consider the genuine costs of public spending has led to a greater expansion in the public sector than would be "desirable." But these are value judgments and, as such, are inappropriate at this stage of discussion. The point to be emphasized is that the failure of the existing set of fiscal institutions to encourage decision makers to consider tax burdens and public service benefits simultaneously tends to make the process of fiscal choice less rational than it could otherwise be. Whether Professor Galbraith or I am correct as to the direction of the bias created is irrelevant to the point at issue here. If the real costs of government were to be more fairly compared against the real benefits, the public might choose either more or less government, or it might choose roughly the same amount. But, whatever the result, the decision made would be more fully informed, more rational, than is possible with the set of existing fiscal institutions.

In Chapter 12, the proposals for tax reform that Knut Wicksell advanced some sixty-five years ago were discussed briefly. It must be recognized that these proposals are not applicable to the real world, then or now. But some such proposals as those of Wicksell can serve as useful guides toward the construction of fiscal reforms which will allow tax and expenditure decisions to be more closely related to each other. The stabilization rule of "budget balance at full employment" contains within it certain elements of a desirable nature in this respect. But some further reform is needed in the direction of breaking down over-all budget magnitudes into separable parts, of earmarking certain revenue sources for certain expenditure categories, and of incorporating tax decisions in the budget itself.

CONCLUSION

Reforms of the fiscal structure designed to make collective decisions more rational cannot be fully discussed in this chapter. This chapter has been directed at pointing up a somewhat different approach to a "principle" of fiscal organization. As we take up particular aspects of the fiscal structure in the remainder of this book, we shall find occasion to criticize or to evaluate particular fiscal institutions on the grounds of the rationality principle discussed here. The principle will become useful only as it is applied. To some extent, the principle is an extension of the old principle of certainty in the distribution of taxes, a principle that has been recognized since

Adam Smith. But a concentration on the decision-making process itself can indicate a range of applicability of the principle that has not yet been realized. Existing fiscal institutions fail to reflect any recognition of the need for rationality in the choice process. Public attitudes are unnecessarily biased even though disagreement may exist concerning the direction and the magnitude of the bias. Fiscal institutions must be considered as variables in any complete analysis, and it should be possible to construct reforms which would eliminate, at least partially, the distortion of individual choice on taxes and public expenditures.

Part IV

FEDERAL EXPENDITURES

This part of the book discusses the expenditures of the federal government of the United States. To this point, the discussion has been general, and it should be of some relevance and applicability for the public finance problems of any Western nation. In Part IV a more limited approach must be adopted. It is necessary to examine the budgetary institutions of the United States in some detail.

A complete survey of government expenditures in the American economy must include state and local units. These will not, however, be discussed in Part IV. Instead, Part VI of the book will be exclusively devoted to an examination of the combined tax-expenditure structures of the subordinate units of government.

Chapter 17 THE FEDERAL GOVERNMENT BUDGET

THE MEANING OF THE "BUDGET"

The word "budget" is used to mean many things. In household economics a budget usually refers to an accounting record of expenditures made during a specified period. In Part II of this book, the term "budget" was used to indicate the fiscal structure of the government, the combination of taxes and expenditures perhaps better defined as the "fisc." In popular discussion, the budget suggests a document that the president submits to Congress for consideration at the beginning of each year.

In its forward-looking sense, the budget is best understood as a program or a plan for government activity over a designated fiscal period. It includes the various activities upon which public authorities propose to spend revenues, and, as a secondary part, it also includes a listing of the various tax sources from which revenues are to be secured during the period. By and large, however, in the United States the "budget" is considered as a plan or program for government expenditure, not for government revenue raising.

In a backward-looking or *ex poste* sense, the budget provides a record of expenditures actually made and tax revenues actually collected. This *ex poste* conception of the budget is useful in determining the impact of governmental activity on the economy, but it is only indirectly important in determining the program for governmental fiscal activity in the future. The forward-looking or *ex ante* interpretation of the budget is the more appropriate for policy-making purposes.

THE EXPENDITURE BUDGET AND THE EXECUTIVE

It has been traditional in Western democracies for the executive branch of the government to make the expenditure budget, at

least initially. The legislative branch of government, the Parliament or the Congress, then approves or disapproves the budget submitted by the executive. There is some distinction here between the United States system and the parliamentary systems of government. The United States Congress possesses much greater traditional power to modify and to expand budgeted activities than parliaments normally have possessed. Congress participates in budget making in the United States. Nevertheless, especially since the Budget and Accounting Act of 1921, under which the Bureau of the Budget was organized, the executive branch of the federal government has borne the major responsibility for determining the pattern of federal spending.

Once again we find an asymmetry between the spending and the tax sides of the fiscal account. The executive branch has never been considered to possess similar powers of determining the direction and the magnitude of the taxes to be imposed on the private economy, taxes which are necessary to finance the expenditures included in the budget. Powers of taxation are concentrated much more closely in the legislative bodies.

The asymmetry between the decision making on taxes and on public expenditure stems from the historical development of representative governments and the struggle of legislative bodies to secure independence from the monarchies. The power to tax was the great oppressive weapon of the monarchy in earlier periods. The first stages of free societies were those during which this power was taken from the monarchies and granted to legislative assemblies.

Broadly speaking, the expenditure budget represents the financial embodiment of the administration's program for federal policy. In its essence, the expenditure budget reflects the prevailing political philosophy of the executive. But, especially in the United States, the expenditure budget must also reflect some recognition of the realities to be faced on the revenue-raising side. Additional public expenditures can only be secured at additional cost during times of substantially full employment of the nation's resources, and a failure of the budget makers to incorporate some sort of weighing of costs and benefits would lead to a breakdown of the whole budgetary process. Faced with the fact that the legislative branch of government possesses somewhat more ultimate control over the levy of taxes, the budget makers in the executive branch must try to present a composition of public expenditures that fall within the desired relationship to the total tax revenues estimated to be forthcoming.

THE BUDGETARY PROCESS

Decisions on federal expenditures are made during the course of a lengthy and complex process. Final decisions embody the interplay of individuals trying to act in accordance with enlightened public interest, those attempting to construct or maintain bureaucratic empires, and those concerned with advancing the interests of particular pressure groups in the society. The process is such that no single individual, group, or agency possesses centralized decision-making power. Congress ultimately bears the responsibility for decision, but the executive branch is charged with the preparation and submission of the budget. The various agencies and departments, more expert in their particular fields of responsibility, share the responsibility for providing the detailed classification of broader budgetary items.

This process can best be discussed by tracing through the preparation of the federal budget for a specific fiscal year. We shall choose the budget for fiscal 1961, which was submitted to the Congress by President Eisenhower in January, 1960. Our story begins much earlier.

The federal budget cannot be adequately understood as a "new" document or program of expenditures submitted to Congress each year. The program of expenditures submitted in 1960 depends to a very important degree on programs and plans that have gone before. Federal government expenditures normally are undertaken for projects that are of more than a year's duration, and it is not characteristic of governments to relinquish particular types of public responsibility once they are undertaken. Recognizing this, the complete history of the budgetary process for fiscal 1961 would require us to trace out the origin of the various budgetary items. For example, the interest on the national debt, a large and important item, would suggest that we look at the manner of financing World War II. Or, if we desire fully to understand the outlay on farm subsidies, we should have to examine the origin of current programs in the 1930's or even in the 1920's. In one sense, decisions are made annually. But the differences between a decision to inaugurate a new program of public spending and the continuation of a previously established program are significant and important.

Even if we disregard the close interdependence between the composition of the 1961 budget and those that have gone before, we shall still have to return to early 1959 to begin consideration of this

specific budgetary process. Sometime prior to April, 1959, the individual bureaus and agencies within the larger federal departments and administrative units substantially completed the initial planning for their own spending programs for fiscal 1961, which began some eighteen months later. During the months of April and May, 1959, the budget offices in the departments and independent agencies worked with the smaller administrative units formulating over-all departmental and agency budgets. Sometime in mid-year of 1959, the central administration, the President working through the Bureau of the Budget, outlined broad budgetary plans for the fiscal year that began some twelve months later. These plans consisted in decisions to allow expansion in certain branches and agencies, to force contractions in still others. These broad budgetary policy decisions were made on the basis of a consideration of general governmental policy in the light of fiscal policy considerations along with revenue estimates. If necessary, budgetary ceilings were imposed on certain departments.

During the summer months of 1959, departmental budget offices worked to revise the departmental budget estimates in accordance with the broad budgetary plans laid down by the President. Normally this process consists of cutting, trimming, and rearranging departmental estimates to reflect central policy plans. Finally, by the end of September, the departments and independent agencies were supposed to submit departmental appropriation requests to the Bureau of the Budget. Between this time and the middle of November, the professional staff of the Bureau of the Budget reviewed the departmental requests and conducted hearings. Upon completion of these, the Director of the Bureau of the Budget reviewed the over-all estimates and the budget as an organized document took form. In November and December the President reviewed the programs as submitted by the Director of the Budget Bureau, keeping in mind the broad objectives of policy previously outlined and bringing to bear whatever changes in this policy that seemed appropriate.

In January, 1960, the budget was submitted to Congress as a document incorporating a rather detailed classification of expenditures and revenues proposed for fiscal 1961. With the submission of this document, the President delivered an annual budget message to the Congress. This message outlined in broad detail the reasons for the make-up of the budget, its composition, and its size. The message also discussed the budget in terms of its impact on the economy.

Between the time of the submission of the budget in January and the start of the 1961 fiscal year in July, 1960, congressional action on the budget was taken. Initially, the budget was taken up in its separate parts by the various subcommittees of the Appropriations Committee of the House of Representatives. Appropriation legislation normally is considered first in the House, and, of course, tax legislation must originate in the House. These subcommittees are organized on the basis of broad functional classifications of public expenditures such as Armed Services, Public Works, Education and Labor, and Atomic Energy. After lengthy hearings, each subcommittee reports an appropriation bill to be considered by the full committee and later by the full House of Representatives. Normally between ten and fifteen major appropriation bills are handled in this way. After passage by the House of Representatives, appropriation measures are taken up by the Senate and follow a similar process of consideration by subcommittees, committees, and the full membership. Final passage of an appropriation measure takes place only upon compromises between the House and Senate versions, after which the appropriation bill is forwarded to the President for his approval or veto.

Final approval of federal expenditure seems to involve a cumbersome, time-consuming, and inefficient process. But the values inherent in this process of decision making are easily overlooked. Precipitate action, either in reducing desirable programs of federal spending or in expanding undesirable programs, does not occur easily under this process. Unwise action by one part of the Congress may be corrected by the other house. Undue expansion or restriction by the administration may lead to congressional action to offset it.

One major defect in the budgetary process of the federal government is often emphasized. Congress considers appropriation legislation independently from tax legislation. The budget document includes some estimates of tax revenues for the fiscal year, but it is considered primarily to be a program for federal expenditures, and the expenditure items are considered by Appropriation Committees. Tax legislation is, on the other hand, considered by the House Ways and Means Committee and by the Senate Finance Committee. Because of this independence between expenditure and tax discussion, final decisions lack a sense of weighing the burdens of additional taxes against the additional benefits of public expenditures. Choices are not made in a genuinely marginal manner. Hence, appropriations, as advanced out of committees, will tend to be some-

what larger than otherwise, whereas tax proposals coming out of the House Ways and Means or the Senate Finance Committee will tend to be somewhat less productive of revenue than would likely be the case if both sides were considered more interdependently. It is somewhat difficult to determine the direction of the final bias here, and, of course, some interdependence must be recognized in the final approval of either tax legislation or appropriation legislation. But improvement in the federal budgetary process would seem possible by some institutional recognition of the necessary interdependence.

BUDGETARY CLASSIFICATIONS OF FEDERAL EXPENDITURES

Functional Classification

Federal government expenditures may be classified in any of several ways. The most useful classification will vary with the purpose. The most general is classification by functions. This classification is the one most often discussed in the public press. It represents an attempt to present the allocation of total federal expenditures among a relatively limited number of functions performed. Each broad heading must, of course, include many subsidiary functions, and the location of any particular subsidiary function is not at all clear in many instances.

The functional classification employed in presenting the federal budget document is as follows:

Major national security
International affairs and finance
Veterans' services and benefits
Labor and welfare
Agriculture and agricultural resources
Natural resources
Commerce and housing
General government
Interest

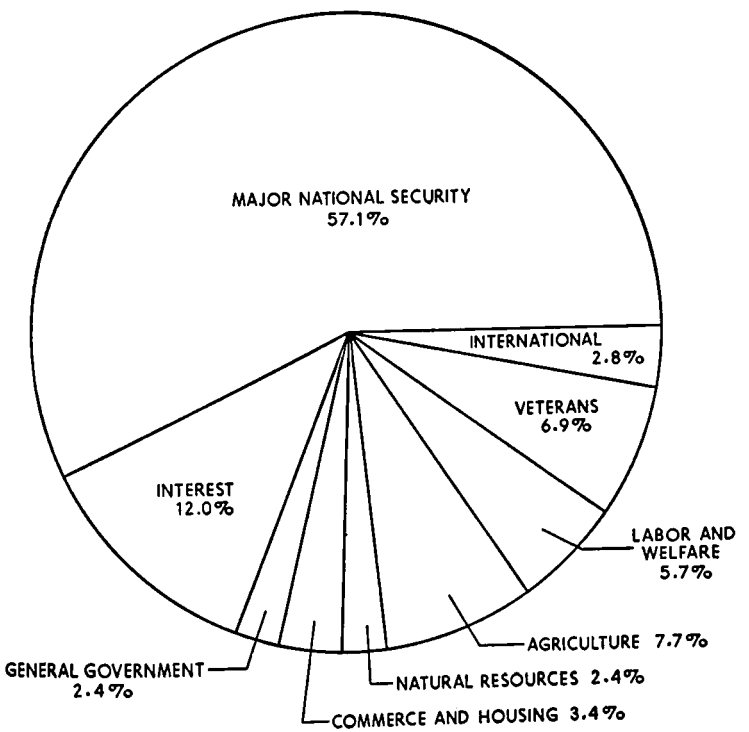
The ambiguities that arise in discussing the federal budget in terms of this functional classification may be illustrated by a single example. Financial aid to the underdeveloped countries could normally be expected to fall in the second functional category, international affairs. But if the aid should be in the form of military support, it would be found included in the first rather than the second category. For example, the proposed budget for fiscal 1961 included

almost $2 billion for military assistance under the category of major national security. Since popular support for national security outlay is normally easier to secure than support for foreign aid, the budget makers will tend to place as many such items in the national security category as is possible.

In spite of such difficulties, the functional classification of the total of federal expenditures into nine categories does facilitate a general understanding of the composition of the budget. Figure 17–1 presents a pie chart showing the actual percentage breakdown of proposed federal expenditures among the major categories for fiscal 1961.

FIGURE 17-1

Proposed Federal Budget Expenditures for Fiscal 1961
Percentage Breakdown



The actual budgetary classification among the major functional categories of federal expenditure is shown for fiscal 1961 in Table

17–1. The figures are those presented to Congress by President Eisenhower on January 18, 1960.

TABLE 17–1

Proposed Federal Expenditures, Fiscal 1961 (by Function)

	(In millions)
Major national security	$45,568
International affairs and finance	2,242
Veterans' service and benefits	5,471
Labor and welfare	1,569
Agriculture and agricultural resources	5,623
Natural resources	1,938
Commerce and housing	2,709
General government	1,911
Interest	9,585
Allowance for contingencies	200
Total budget expenditure	$79,816

Agency Classification

Classification by function to be performed is helpful in providing a broad understanding of the composition of federal expenditures. But it is rather useless for accomplishing some of the other purposes that the budget document must also serve. The budget is a composite result of a process of choosing the allocation of funds among the separate departments, agencies, and subsidiary units of the whole federal bureaucratic structure. The Air Force is relatively disinterested in the budgetary appropriation for major national security as shown in the functional classification. It is primarily interested in the expenditure authorization allocated to Air Force defense under the broader Department of Defense classification. Classification of total expenditures by departments and agencies that are to be authorized to undertake the expenditures is more useful in the day-to-day administrative implementation of the budget. And it should be recalled that it is through the desires, plans, programs, and purposes of the separate subsidiary units that the budget originally evolves as an over-all plan or program.

The classification of the federal budget by agency is presented in Table 17–2 in which the actual budgetary totals as proposed to the Congress in January, 1960 for fiscal 1961 are included.

TABLE 17-2

Proposed Federal Expenditures, by Agency, for Fiscal 1961

	(*Millions of Dollars*)
Legislative branch	$ 162
Judiciary	52
Executive Office of the President	79
Funds appropriated to the President	
Mutual security	1,700
Other	114
Independent offices	
Atomic Energy Commission	2,689
National Aeronautics and Space Administration	600
Veterans Administration	5,446
Other	1,446
General Services Administration	458
Housing and Home Finance Agency	500
Department of Agriculture	6,201
Department of Commerce	473
Department of Defense—Military Functions	42,745
Department of Defense—Civilian Functions	972
Department of Health, Education, and Welfare	3,517
Department of the Interior	809
Department of Justice	271
Department of Labor	540
Post Office Department	49
Department of State	292
Treasury Department	10,452
District of Columbia	48
Allowance for contingencies	200
Total budget expenditures	$79,816

Object Classification

Still another purpose which the budget must perform is that of facilitating control of expenditures by the individual units in the bureaucracy. For this purpose, a classification of total expenditures on the basis of objects actually purchased by the various governmental departments and agencies is desirable. It is in the object classification of things to be purchased and in the accounting for authorized expenditures in this way that much of the necessary but ubiquitous "red tape" of governmental administration arises. The classification by objects under the Veterans Administration part of the federal budget document is listed as follows for illustrative purposes:

01 Personal services
02 Travel

03 Transportation of things
04 Communication services
05 Rent and utility services
06 Printing and reproduction
07 Other contractual services
08 Supplies and material
09 Equipment
11 Grants, subsidies, and contributions
13 Refunds, rewards, and indemnities
15 Taxes and assessments

THE BUDGET AS A COMBINED ACCOUNT

As suggested, for many purposes the budget is considered primarily as a program for the composition and size of federal expenditure. In its broader meaning, however, the federal budget incorporates both sides of the fiscal account; it must include estimated revenues as well as spending. In Part II when fiscal policy was discussed, the term "budget" was used to refer to a combined schedule of tax revenues and public expenditures.

For any orderly picture of the complete government fiscal operation to be presented, a combined-account form of the budget must be employed. Therefore, in the budget document as presented each year a breakdown of both estimated revenues and estimated expenditures is included. Table 17–3 presents the proposed federal budget for fiscal 1961 in this combined-account form.

TRUST FUND ACCOUNTS AND THE CASH BUDGET

The "budget" discussed to this point has been the administrative budget, that is, the programmed outlay of federal expenditures submitted to the Congress by the President at the beginning of each year. This is not the appropriate budget to use in assessing the impact of federal expenditures on the economy. Federal spending in any one year will be substantially larger than the totals suggested by the administrative budget. To the totals included must be added federal spending out of trust fund accounts, spending that is becoming increasingly important in recent years. The *cash budget* is a term employed to indicate the total federal spending and revenues. This budget includes all federal payments to and federal receipts from the economy. Quite clearly it is the cash budget that is relevant when we discuss budget balance or unbalance and its effect on the state of the economy, the subject of Part II of this book.

TABLE 17-3

Proposed Budget Receipts and Expenditures by Function—Fiscal 1961

	(*In millions*)
Budget Receipts	
Individual income taxes	$43,706
Corporation income taxes	23,500
Excise taxes	9,523
Employment taxes	340
Estate and gift taxes	1,620
Customs	1,376
Miscellaneous	3,935
Total receipts	$84,000
Budget Expenditures	
Major national security	45,568
International affairs and finance	2,242
Veterans' service and benefits	5,471
Labor and welfare	4,569
Agriculture and agricultural resources	5,623
Natural resources	1,938
Commerce and housing	2,709
General government	1,911
Interest	9,585
Allowance for contingencies	200
Total expenditures	$79,816
Budget surplus or deficit (+)	$ 4,184

For purposes of executive and legislative decision making, however, the distinction between the administrative budget and the cash budget is a necessary and useful one. The administrative budget includes proposed items of federal expenditure upon which congressional appropriation action is necessary prior to implementation. Federal spending out of trust fund accounts does not require such action. This is because these funds normally have earmarked sources of revenue from which expenditures by the appropriate governmental units are authorized by prior legislation.

If we consider the spending side alone, the cash budget must always be larger than the administrative budget. As suggested previously, the amount of spending out of trust fund accounts is becoming increasingly important in relation to total federal spending. This is due to the increasing value of outpayments under the social security program and to the grants made to states under the highway trust fund created in order to finance the construction of the Inter-

state Highway Network. In fiscal 1961, for example, total federal spending is estimated to amount to $96.3 billion as compared with a total of $79.8 billion included in the administrative budget. Spending out of trust funds is estimated to amount to more than $16 billion.

Trust fund receipts are also separated from ordinary budgetary revenues because they are normally earmarked proceeds of particular taxes. Social security taxes and federal gasoline taxes produce revenues that are specifically earmarked for expenditure. When both federal spending out of trust fund accounts and federal receipts into trust fund accounts are considered, the cash budget may be expansionary or contractionary when compared to the administrative budget. If trust funds are adding to accounts by receiving more in revenues than they are paying out, this correction to the administrative budget will modify the latter in the direction of exerting a more restrictive influence on the economy. When trust funds are spending more than they currently receive, the cash budget is more expansionary than the administrative budget.

RECOMMENDED BUDGETARY REFORMS: PERFORMANCE BUDGETING

Several proposals have been recently made to improve federal budgetary practice. One of the specific improvements most often mentioned involves a greater employment of *performance budgeting*.

The idea behind performance budgeting is simple. In order for decisions to be made properly, the decision maker needs to understand as fully as possible the results of alternative courses of action open to him. As applied to the budget, this suggests that the decision maker needs to know the relative costs and benefits of the various choices that might be made. How is the decision maker to know when, for example, to reduce federal outlay on missiles by $1 billion and increase federal outlay on foreign aid by a like amount? He needs to know just what he will be giving up on the one hand and what he is gaining on the other.

Performance budgeting, at lower levels of policy administration, represents an attempt to reduce alternative expenditure programs to measurable or quantifiable units of service that can be more correctly weighed one against the other. The argument for this reform suggests that Congress could make "better" decisions in allocating public money between federal irrigation projects and urban renewal programs if the benefits from marginal additions to irrigation proj-

ects could be reduced to measurable units, preferably in terms of dollar values; and, similarly, for the urban renewal projects.

In a fundamental sense, performance budgeting embodies an economic, or perhaps better said, an economist's, approach to the federal budget. The proposal is that the marginal approach to decision making be explicitly recognized. Certain aspects of this approach will be discussed in Chapter 18 when the whole issue of efficiency in government expenditure is examined.

RECOMMENDED BUDGETARY REFORMS: CAPITAL BUDGETING

Various proposals are made from time to time regarding the introduction of a *capital budget*. This proposal involves the separation of total federal expenditure into two parts: a current budget and a capital budget. The current budget would include all items of programmed public expenditure on recurring or continuous public services. The capital budget would include expenditure on public assets of a durable nature and which are not normally recurring. For example, the salaries for civil servants would always be included in the current budget. These salaries must be paid each year, and the services secured from the hire of civil servants are used up in the course of the current budgetary period. On the other hand, federal expenditure to finance an improvement to New York harbor would be included in the capital budget. Such improvement would be equivalent to the creation of a durable capital asset, and it would not be expected to recur frequently.

The proponents of capital budgeting claim several advantages to be gained from this change. First of all, separation of the total spending program into the two sectors would be helpful in estimating the total impact of the government economy on the private sector. Second, the introduction of the capital budget separate from the current budget would allow long-term investment-like projects to be financed through debt issue rather than through current taxation. Budget balance, as a principle or rule of fiscal responsibility, would apply only to the current budget, which should include all recurring items of spending. For long-term projects, long term in the sense that they are expected to yield "social real income" over a succession of budgetary periods, debt issue combined with amortization schedules extending no longer than the life of the asset would be appropriate. Interest and amortization charges resulting from previously issued debt would be included in the current budget.

If the institutional structure of decision making were to be so arranged as to allow provision for amortization and servicing of debt obligations at the same time that appropriations for capital outlay are approved, the use of the capital budget should lead to a more "intelligent" use of public funds. On the other hand, the introduction of the capital budget on the expenditure side alone does not seem to represent improvement. Perhaps the most desirable means of introducing some of the flexibility allowed through the capital budget would be to handle specialized capital investment projects through special trust fund accounts. These accounts can have earmarked revenue sources and, under certain conditions, might be allowed to issue special forms of debt for long-range investment projects.

CONCLUSIONS

The federal budget is designed to serve many separate functions. It represents a program for public expenditures, which, in turn, reflects the over-all political policy of the executive. The budget document submitted to Congress also represents the result of the many conflicting claims of the separate elements of the bureaucracy for continued and expanded support. The budget also must facilitate the actual spending process and the final accounting for public funds.

The expenditure budget may be broken down into several classifications, with the particular one chosen being dependent on the purpose to be served. The most familiar is the classification of expenditures by function. But, for administrative purposes, the breakdown by agency is more useful, and accountability requires classification by objects purchased.

If the budget is to be used in helping to understand the impact of the government on the economy, the combined revenue-expenditure version must be employed. A distinction must be made here between the administrative budget and the cash budget. Adjustment to the administrative budget must reflect the receipts from the public and payments to the public by the special trust fund accounts.

Performance budgeting is one of the reforms in budgetary policy that is often advanced. This represents an economic approach to budgeting, and the performance budget is designed to allow better and more informed decisions to be made. The various public outlays are to be compared in terms of services rendered at the margin, with the various services to be quantified and, where possible, reduced to terms of dollar measures of benefits and costs.

Another proposed reform is the introduction of a capital budget. While this would allow some greater flexibility in the adherence to the rule of budget balance, it would be difficult to organize the federal budget into a current and a capital sector at the present time.

Perhaps the most significant improvement that could be made in the whole budgetary process would be some institutional change in the Congress which would allow for more recognition of the necessary interdependence between decisions on appropriations for public spending and decisions on tax levies. This suggests that some alteration in the whole committee structure of the Congress might be a more fruitful approach to budgetary reform than any particular change in the manner of reporting either expenditures or taxes.

SUGGESTED SUPPLEMENTARY READING

The student interested in learning more about the federal budgetary process is advised to read Jesse Burkhead, *Government Budgeting* (John Wiley & Sons, Inc., 1956), or Arthur Smithies, *The Budgetary Process in the United States* (McGraw-Hill Book Co., 1955). For perhaps the best way to secure an impression of the enormity and complexity of the federal budget, the student should spend a few minutes examining the federal budget document itself.

Chapter 18 EFFICIENCY IN FEDERAL SPENDING

THE NOTION OF EFFICIENCY

"Efficiency" as a norm for the over-all organization of the fiscal system was discussed in Chapter 12. There it was suggested that the "ideally efficient" or the "ideally neutral" fiscal system would be one which makes individual choices for collective goods and services as closely analogous as possible to individual choices for privately produced goods and services in the perfectly working market economy. In that context, the criterion of efficiency is the degree of correspondence between individual benefits received from public services at the margin and the costs of public services imposed on the individual, again at the margin of decision. As was indicated in the earlier discussion, this broad conception of efficiency is of rather limited usefulness. Fiscal systems actually are organized and changed in accordance with many conflicting goals, with efficiency in the sense here employed being perhaps a relatively unimportant one.

Nevertheless, efficiency can continue to be a useful norm at a second-order level. But second-order efficiency can mean many things. In Chapter 12, the principle of "least-price distortion" was shown to be helpful in evaluating fiscal proposals. This principle involves the maintenance of the highest degree of "efficiency" in the production and use of *private* goods. The fiscal structure that minimizes the impact on individual behavior in the private economy will, in a second-best sense, maximize the productivity of resources devoted to the private sector.

In this chapter a different conception of second-order efficiency will be introduced. If it is accepted that public or collective goods are to be provided through government, the notion of "efficiency" must

also be applied to the allocation of public expenditures among the many collective goods and services provided. This approach, which is the traditional one in discussions of public expenditure, somewhat arbitrarily divorces the expenditure process from the revenue-raising or taxing process. In a later section we shall discuss some deficiencies in this, but, at this juncture, we shall accept the legitimacy of this approach.

We assume that a decision has been made to devote a specific sum to public or governmental purposes. This initial assumption allows us to separate the "size of government" decision from the "composition of government" decision. This converts the budgetary problem into one identical with that assumed to confront the individual consumer in economic theory. The consumer is assumed to have available a fixed total income to be spent on several goods and services. We make the budgetary process identical by postulating that a given revenue sum is available for public spending. As with the consumer, the problem becomes, in this way, one of *maximizing* the return from the limited or scarce resource, which is, in this case, total expenditure.

An "efficient" allocation of any scarce resource is defined as one that maximizes the useful output or return from any *given* total input.[1] This elementary definition is completely general, and it may be applied to an oil furnace, a gasoline engine, a nuclear power plant, a church organization, the operation of a firm, or a housewife's trip to the supermarket. In each of these cases, some meaning may be attached to the term "useful output," be this BTU's, horsepower delivered, kilowatt hours, souls saved, the present value of a future profits stream, or family utility.

THE CRITERION PROBLEM

The last sentence may be stated differently by saying that, in each of the cases mentioned as examples, a reasonably definite *criterion* exists by which alternative possible operations, processes, or allocations may be measured and evaluated. We may, for example, wish to compare two oil furnaces costing the same amount initially and burning the same amount of fuel. The primary consideration in

[1]Any allocation problem can be stated in either maximization or minimization terms. An efficient solution maximizes the return from a *given* input, or, conversely, minimizes the input necessary to produce a *given* output. Either the numerator or the denominator of the input-output ratio must be fixed. The maximization or the minimization of a ratio is not a meaningful criterion.

this case would be the thermal units of heat produced. If we can ignore such other factors as noise of operation, cleanliness, and so forth, it becomes relatively easy to decide which of the two furnaces is the more "efficient," that is, which provides the most units of output per dollar of a *given* cost outlay. If need be, in such instances as this we may employ consulting engineers or technicians to give us the correct answers. They would be able to do so because we are able to tell them precisely what we want; we define a criterion in advance.

The criterion problem becomes considerably more perplexing in the supermarket example. Here we assume a given resource: money to be spent. The housewife must maximize the return from limited outlay. But what *criterion* is to be used in this case? How can any one combination of supermarket products be ranked higher than another? The common denominator here can only be some subjective "satisfaction" or "utility." The money is spent efficiently when the maximum utility is secured. But this is a rather vague criterion. Whereas the aid of the consulting engineer is very helpful in choosing furnaces, the consulting "home economist" is of considerably less assistance in choice making. The housewife finds it difficult, often impossible, to specify precisely what "utility" means. To do so would amount to telling the observer just what the taste pattern is, and the housewife herself may not really know until she is actually confronted with the alternatives from which she must choose. A good share of modern advertising and sales promotion techniques is based on the assumption that consumer tastes are, in fact, determined only at the moment of decision. This amounts to saying that the objective definition of a criterion becomes extremely difficult in consumer choice. In spite of this, we may speak of "efficiency" in a meaningful way here. We may do so because the consumer herself can judge among "better" and "worse" allocations of expenditure; objective definition of a criterion is not necessary.

PUBLIC EXPENDITURE: HIGH-LEVEL EFFICIENCY

A whole new set of problems arise when we try to apply the notion of "efficiency" to the allocation of a given budget among the many possible public expenditure categories. Some *criterion* must be employed in evaluating alternative budgetary compositions. But what is the "thing" that public activity, the "government," is sup-

posed to achieve? What is to be maximized by the allocation of limited funds among the various public sectors?

One answer to these questions is "social welfare" or "the public interest." But what do these terms mean? How can they be defined objectively? The terms mean different things to different people, and, this being the case, which people (or better, which one person or like-minded group) is to do the defining? As we have emphasized before, the "government," as such, is not an independent organism, and government decisions must be made by individuals. If, in fact, everyone could agree on an unambiguous definition of "social welfare," which would have to include a fixing of the appropriate trading ratios among all conflicting social goals, some discussion of "efficiency" in public spending could become possible. But since this required sort of agreement seems out of the question in a free society, "efficiency criteria" for high-level budgetary planning do not appear to exist.

RATIONALITY IN DECISION MAKING

Does the absence of efficiency criteria in the normal sense suggest that any one allocation of federal expenditures is as good as any other? And, if this should be the case, would not some random selection procedure be appropriate as a means of budget making? The answer is, of course, negative. Some budgetary allocations are better than others, *to me*. But the last two words in the sentence need emphasis. As with the housewife in the supermarket, no objectively determinate means of defining a criterion exists; but individual choice must be based on some subjective notion of efficiency.

The fundamental point to be made is that to the official in the government department or agency, to the fiscal expert in the Bureau of the Budget, or to the legislator, some criterion of "efficiency" exists. If not, decisions would be wholly arbitrary. But the criterion differs from individual to individual, and there is no objective manner of assessing the relative worth of various individual evaluations. Representative Jones from Michigan may feel, with all honesty, that greater contribution to "social welfare" is to be made by federal spending of a million dollars on reforestation in Upper Michigan than by spending a million dollars for an irrigation project in Nevada. Representative Brown from Nevada may feel precisely the opposite. It is impossible for the analyst, the specialist, to determine which, if either, of the two is "correct."

Just as with the housewife, however, federal spending decisions, by whomever made, can be more "rational" if decision makers are more fully informed. Therefore, for high-level decisions on the allocation of federal expenditures, the task of the analyst is to inform decision makers of alternative courses of action. Actual decision-making processes must be examined with a view toward determining whether or not full information concerning the consequences of alternative courses of action is provided. "Rationality," defined in this way, must replace "efficiency" as something which can be objectively measured by the observer.

In this view, there is no real meaning to be attached to the complaint that the federal government is not spending "enough" on national defense. If the executive and the legislative departments, as normally constituted, are fully informed of the consequences of action taken, the decision that they make must be accepted to be as good as any other. There is no basis, other than the purely subjective one, upon which the presumed "expert" can say that we need an additional $10 billion spent on missiles.

LOW-LEVEL EFFICIENCY

As we shift our attention to lower levels of budget making, to the breakdown of the larger budget items into their component parts, "efficiency" in the accepted sense can assume sharper form and it can, in certain cases, provide a basis for improved performance in budgetary allocation. The reason for this difference between high-level and low-level application of the efficiency conception is that, at the lower levels of the budget, somewhat more definite criteria can be introduced.

Suboptimization

The approach to budgetary problems at these lower levels is that of *suboptimization.* It is fully recognized that the "efficiency" criteria adopted are provisional and partial, and, if broader decisions are brought into consideration, may not be applicable at all. Nevertheless, proponents of the suboptimization approach hold that significant improvements can be made at the lower levels of decision. Suboptimization is realistic in that it recognizes the decentralization of actual decision making. Detailed decisions on the allocation of public funds among smaller subsections of the federal budget must be made, to a large extent, by individuals with restricted powers who

are interested in and informed about only a limited aspect of the over-all budgetary problem. In addition, their final decisions must, to a certain extent, be made independently of other decisions in the budgetary process.

The suboptimization approach to greater efficiency in federal spending may best be illustrated by example. Examination of the budget document reveals that the Bureau of Land Management of the Department of the Interior spent an estimated $711,500 for weed control in 1957. Approximately 70,000 acres were treated for the removal of halogeton and other obnoxious weeds. At this level of the budget plan, suboptimization techniques may be easily applied. The criterion can be made quite definite, and it can be put in terms of quantifiable and measurable units. In this particular case, the suboptimization problem can be stated in several ways. First, if the 70,000 acre limit is fixed, the criterion can be the maximum removal of obnoxious weeds for the *given* budgeted outlay. Or, alternatively, the criterion could be stated in terms of treating the maximum number of acres, to a specified weed removal level, for the given budgeted outlay. Finally, the problem could be converted into a minimization problem by stating it as follows. Minimize the cost of treating 70,000 acres to a specific level of weed removal. In either case, the criterion is quantifiable and subject to scientific, objective measurement. The weed count per acre can be tested, the number of acres can be counted, and the dollar cost can be determined. The decision maker must choose from among the available means of weed control that one which minimizes costs or maximizes the number of weeds eliminated or acres treated. In making this choice, analytical aids can be of great assistance. A scientific approach to decision making at this level can do much toward introducing greater efficiency into the budgetary process.

Operations Research

The scientific approach to such problems as that posed in this example has come to be known as *operations research.* This has grown up to be a specialized branch of study since its introduction in World War II. Operations research represents the efforts of specialists to examine exhaustively and completely the alternatives open to the decision maker. The specialist cannot assist in the determination of the criterion itself. His task is rather that of measuring results from alternative courses of action, and of exploring new and untried means of achieving similar results. Operations research would, in

fact, be of little value if it could do nothing more than assist the decision maker in choosing from among existing methods of accomplishing specified tasks. One of the major functions of operations research is that of searching for new methods, new schemes of organizing operations.

We may return to our weed control example for illustration, which is, of course, purely hypothetical. The whole process of determining the weed control method that minimizes costs of treating 70,000 acres may have been based, in the past, on the implicit assumption that chemical weed killers are the means to be employed. The skilled operations researcher can perhaps point out that the more effective method of destroying obnoxious weeds is by the planting of other weeds which will naturally destroy the obnoxious ones. Or, still another alternative may prove more acceptable, such as introducing small furrowing animals whose activity destroys the root systems of the poisonous weeds. The successful operations research analyst, whether employed by a government department or agency, or by a business firm, must try to examine all conceivable means of accomplishing the specified tasks. By careful experimentation, he should be able to determine the one way that will maximize the returns (as determined by the choice of criteria) from the *given* outlay, or of minimizing the costs of the *given* accomplishment.

SYSTEMS ANALYSIS: FROM LOW TO HIGH LEVELS

The operations research approach to budgeting decisions begins at the lowest levels of decision making where the objectives of governmental policy can be quite clearly specified. Attempts to extend this approach to higher levels in the decision-making hierarchy are sometimes defined as *systems analyses*. As the term suggests, systems analysis involves the examination of whole systems of operation as opposed to the examination of a single operation in isolation. The process is still one of suboptimization in that no effort is made to include the whole budgetary allocation in one system. But the level of suboptimization is moved upward in the decision-making hierarchy.

The systems analysis approach may also be illustrated in reference to the hypothetical weed control example. Systems analysis would involve the consideration of a broader program of land management than weed control alone. A more careful study of the whole land management program might reveal that the elimination of poi-

sonous weeds, apparently desirable when considered at lower levels of decision, causes certain insects to breed more rapidly; and these insects tend to infest campsites, making their control more expensive. Therefore, systems analysis might reveal that some reduction of weed control effort is suggested in the light of broader criteria of land management.

It is clear from this example that the problem of defining appropriate criteria becomes more difficult in systems analysis than in lower-level operations research. The degree of weed control may be quantified and measured. But what criteria may be employed that will vary directly with the degree of "good" or "efficient" land management? We see that, as we approach the higher levels of decision making, the problem of defining "efficiency" becomes insoluble, as we have indicated earlier.

The degree to which systems analysis, as a scientific aid to decision making, can be helpful will vary with the particular characteristics of the problem. In the extremely important military sector of the federal budget, systems analysis has been, and can continue to be, of major importance. The reason for this is that the objectives to be secured from specific branches of the national military establishment can, to a limited extent, be quantified in a manner that is generally suitable for analysis. This approach to the planning of defense expenditures will be discussed in some detail in the following chapter. On the other hand, operations research or systems analysis may be of little assistance in determining the personnel organization of the postal system. The employment and personnel policy of the postal service must embody criteria other than the delivery of the mails at the lowest cost; political patronage, an important aspect of the American democratic system, is very important in any consideration of the postal service. The appropriate trading ratios between the cost of mail delivery, which can be quantified and measured, and political patronage cannot be easily incorporated into a systems analysis that will be of great assistance to the Post Office Department in making its budgetary and operational plans.

COST-BENEFIT COMPARISONS

Aside from the military budget, which will be discussed in Chapter 19, the scientific approach to the federal budget has been more often applied to those expenditures on natural resource development. Attempts have frequently been made in recent years to evalu-

ate federal spending programs for irrigation projects, river and harbor improvements, the construction of dams, and water resource developments more inclusively considered. For many years, both the Army Corps of Engineers and the Bureau of Reclamation have tried to evaluate alternative projects in terms of some comparison between estimated costs and estimated benefits.

Before any estimate of costs and benefits can be made, some prior decision must be reached that both these sides of the proposed operation can be quantified and reduced to dollar value equivalents. It is easy to see how the benefits from an additional increment of federal expenditure on vocational education, for example, would not be subject to estimation readily in dollar terms. On the other hand, benefits from water resource projects do accrue to specific population and occupational groups, and these benefits take the form of additions to capital values. Therefore, careful analysis can quantify these benefits in dollar terms. Similarly for the cost side. It is not easy to assess in dollar terms the true cost of the newly established program for National Defense Graduate Fellowships. It is relatively easy to put dollar figures on the estimated costs of a newly proposed watershed development project. For these reasons, we find that more attention has been paid to the rather limited parts of the federal spending program that deal with resource development.

Cost-benefit estimates are usually applied to projects which involve a considerable period of construction and are expected to yield benefits only over a long period. The projects are in the nature of public capital investments.

Of course, almost innumerable projects for resource development could conceivably be undertaken, provided that federal budgetary allocations were unlimited. Hence, the appropriate decision-making agencies are always faced with a list of proposed projects more inclusive than their limited budgeted expenditures will allow to be carried out. The agencies must, therefore, employ some means of choosing among the separate possible projects to be undertaken.

The Cost-Benefit Ratio

One means that has been developed to assist in this decision is the cost-benefit ratio. Attempts are made to estimate total benefits from a proposed project along with the total expected costs. These totals are then reduced to annual benefits and annual costs, and the

ratio between these two terms is taken as a proximate criterion for estimating the "worthwhileness" of the project considered.

Several points may be made. First of all, the cost-benefit ratio may be considered to be the appropriate means for eliminating projects that are not socially "profitable." Those projects for which estimated costs exceed estimated benefits may, on these grounds, be eliminated. The implications of using the cost-benefit ratios in this manner should, however, be clearly understood. Normally, the benefits accrue to a different set of individuals from those who bear the costs in terms of added tax liability. The use of a cost-benefit ratio to determine social "profitability" under these conditions amounts to assuming that all individuals are identical in their capacities to enjoy real income, regardless of income status. In practical terms, this approach assumes that the landowner in California, who may secure an additional dollar of benefit from an irrigation project, is equally important in the social decision to the Pennsylvania coal miner who must, as a result of the irrigation project in California, pay an additional dollar in taxes.

A much more limited application of the cost-benefit ratio may be that of determining the allocation of a *given* expenditure total among several competing projects. The responsible agency may choose projects with the highest ratio of annual benefits to annual costs. This is an erroneous usage of the cost-benefit ratio, as several recent studies have pointed out. What is appropriate is the maximization of the total "social profit" for the limited budgetary outlay. The use of the cost-benefit ratio is likely to be misleading in that it overlooks the choice of the appropriate scale of projects.

Present-Value Criteria

If an agency engaged in resource development projects desires to maximize the return, calculated in dollar benefits, from its limited budgetary outlay, it can best do so by relying on the criterion of present values to choose among the separate projects. By choosing those projects with the highest present values, computed by discounting the expected returns net of costs at an appropriately chosen rate, the maximum return from a given budget can be guaranteed. In many cases, the choices made with this criterion will be the same as those that would follow from using the cost-benefit ratio. But whereas the use of the cost-benefit ratio can lead to error, the use of present value or present worth will normally produce the "correct" conclusions.

DIFFICULTIES IN COST-BENEFIT ESTIMATION

Even for those federal spending projects to which cost and benefit estimates seem applicable (and it must be emphasized that this is a rather limited subset of total federal spending items) actual calculation of expected costs and expected benefits introduces many complex problems. Only a few of these can be mentioned in our brief treatment here, but these few should suffice to indicate the type of difficulties that may be encountered by the analyst who tries to assist the decision makers.

Let us assume that a specific federal project is proposed, say the construction of an additional dam in a river valley development system. Let us leave aside problems that arise in the estimation of costs and concentrate attention on the estimation of expected benefits. Let us further limit our problem (unrealistically) by assuming that the only benefits to be measured are those which relate to the flood control aspects of the proposed dam. This has already simplified our problem beyond the limits of most real-world situations.

Let us say that the dam is estimated to yield expected benefits over a twenty-year period. The calculation of a present value of this expected benefits stream over time makes necessary the use of some discount rate. But what discount rate is appropriate in application to federal spending projects? The average rate of interest paid on government securities is sometimes suggested. But against this the point is made that the discount rate on capital projects should reflect the net yield on capital investment at the margin in the private economy. This apparently minor issue in cost-benefit estimation can make major differences in the results. Five years away from the present, $1,000 in estimated benefits discounts to a value of $822 at 4 per cent, but only to $682 at 8 per cent. The longer the projects are expected to yield benefits over the future, the more important the discount rate decision makes in arriving at an estimate for the present value of total benefits.[2] As a general rule, the discount rates that have been used to estimate benefits have been lower than the yield on capital investment in the private economy, and they have, in some instances, even been lower than the average rate of interest on government securities.

Aside from the difficulty of choosing an appropriate discount rate, many other problems are encountered in cost-benefit estimation.

[2]For a brief account of the importance of the interest rate in cost-benefit analysis, see Arnold Harberger, "The Interest Rate in Cost-Benefit Analysis," *Federal Expenditure Policy for Economic Growth and Stability* (Joint Economic Committee, 1957), pp. 239-41.

The protection against damaging floods can be conceptually measured in terms of increased capital values of the land areas affected. But since floods are unpredictable natural occurrences, what certainty equivalent should be used in evaluating benefits from flood protection? Land that is inundated once each fifty years, on the average, will increase less in value than land inundated once each five years. An additional complication arises in trying to estimate the increments to land values even when the uncertainty factor is eliminated. What prices shall be assumed to prevail for the product of the land? What yields per acre can be taken as the average yields? All of these are important questions that must be answered, for better or for worse, in any concrete evaluation of benefits.

Perhaps more significant problems arise in the necessity that accurate benefit estimation include some evaluation of indirect and spillover effects. If flood control of a given river valley should cause private individuals to increase private investment in the development of the valley, should the net addition to investment be included in the benefits of the flood control project? Equally, and perhaps greater, problems arise in the estimation of costs.

This brief discussion of the difficulties that arise in any attempt to estimate concretely the benefits and costs from federal spending projects is not intended to disparage efforts in this direction. If the budgetary process at this level of decision making is to be made more "efficient," it seems essential that some attempts, however heroic, be made to translate both costs and benefits into dollar values. The danger is, however, that the cost-benefit calculations will tend to become frozen into a mechanical formula which really overlooks many of the most difficult problems and which results in choices being made that are worse than those that would follow from the use of cruder, but really more informed, methods. The expert who tries to assist public decision making must be constantly alert to the many problems that beset attempts to translate either the costs or the benefits of public services into dollar values.

EFFICIENCY AND INTERDEPENDENCE

Federal spending looms so large relative to the total economy in the United States that continuing attempts to introduce greater "efficiency" can be expected. Systems analysis, operations research, and cost-benefit calculations are various terms used to define separate and related efforts to provide some scientific guidance in the decision-

making process. But the context within which "efficiency" in public spending is discussed must ever be borne in mind. At best we speak of a second-order idea of efficiency. The best of efforts at suboptimization are likely to appear frustrated until and unless this is fully recognized.

The allocation of public expenditures is dependent on the structure of federal taxes. The initial assumption in the approach to efficiency in public spending is not appropriate. Governments do not have a specified revenue sum to allocate among the various uses. If they did, much greater objectivity could be introduced into the budgetary process. The "efficiency" approach would be limited here only by the absence of a meaning of the term in high-level budgetary decisions. But the amount of revenues that Congress raises through federal taxation is tied quite closely to the allocation of federal expenditures among the separate uses. Broadly speaking, the decisions on expenditures and taxes must be considered to be made simultaneously, despite the institutional structure of Congress. This fact makes any independent achievement of "efficiency" in public spending rather meaningless, even at the lower decision-making levels. The best of cost-benefit estimates may, for example, indicate that federal spending on improvement of rivers and harbors be substantially cut. But congressional approval of the heavy tax burden implicit in an $80 billion federal budget may be dependent on a substantial appropriation for river and harbor improvement, with considerable geographic dispersion of the projects undertaken.

Quite similar processes apply at still other budgetary levels. The point to be made is that the over-all size of the budget cannot be separated from its composition. The two decisions are interdependent. This makes the approach to "efficiency" in the use of public expenditures somewhat elusive at best, and misleading at the worst.

CONCLUSIONS

The notion of efficiency in the allocation of public expenditures must be recognized to be of a second-order sort since over-all efficiency in fiscal organization would involve a simultaneous determination of the size and the composition of the budget. Nevertheless, some progress may be made by assuming at the outset that the government possesses a fixed revenue sum to be allocated among the many possible uses. This places the government in a role analogous to the consumer. But this immediately raises the question of the appropriate

criterion by which various budgetary compositions may be evaluated. At the higher levels of decision making, say as concerns the decision between the amount of funds to be appropriated to national defense and to federal housing projects, the notion of efficiency itself seems misleading. All that can be done at this level is to assist decision makers in outlining the consequences of alternative courses of action to be taken or choices to be made.

Further down in the budgetary hierarchy, a more scientific approach to budgeting can be taken. Criteria can be more acceptably defined. The rapidly developing skills of the operations research or systems analysis specialist can be brought to bear to assist in the formulation of these low-level budgetary decisions. Aside from the application to the military budget, scientific approaches to decision making have been attempted primarily in the allocation of federal spending in the fields of resource development. Here the use of cost and benefit estimates have been introduced and employed as aids in the decision process. The application of these methods has raised many problems in the appropriate methods of evaluating benefits and in estimating costs.

Any attempt to push the notion of "efficiency" too far in the making of budgetary decisions runs afoul of the fundamental fact of interdependence between the composition of public expenditures and the size and composition of the federal revenue totals. Any realistic analysis of the federal spending process should start from a recognition of this interdependence.

SUPPLEMENTARY READING

This chapter owes much to the excellent work of R. N. McKean, *Efficiency in Government Through Systems Analysis* (New York: John Wiley & Sons, Inc., 1958). The student interested in further study of the points raised in the chapter is referred to this book.

Chapter 19 FEDERAL EXPENDITURES FOR NATIONAL SECURITY

Almost 60 per cent of total federal expenditure falls under the budgetary heading Major National Security. In the pre–Korean War year of 1949, defense expenditure accounted for only 32 per cent of federal spending. This percentage moved upward to a post–World War II high in 1953 of 69 per cent, and, since that time, it has remained roughly at the 60 per cent level. In absolute terms, the magnitude of federal defense spending is even more impressive. For the fiscal year 1961, the administrative budget presented to Congress included $45.6 billion allocated to defense expenditures. At the time this budget was presented, in January, 1960, this amounted to almost one tenth of the estimated value of gross national product. For purposes of simple approximation we may consider that one dollar's worth of each ten produced in the United States is somehow related to national defense outlay.

This suggests that the character and the effects of the federal budget on the economy are, to a large extent, dependent on this major component. In this chapter we shall examine some of these effects. But first it is necessary to examine the breakdown of the total budgeted expenditure for major national security. We shall again use the budget proposals for fiscal 1961 as the basis of the discussion. Out of a total of $45.6 billion allocated for Major National Security, $40.9 billion was allotted to military defense and was budgeted by agency to the Department of Defense. The remaining $5 billion was allotted to the Atomic Energy Commission for the development of atomic energy ($2.7 billion) and to the various programs of stockpiling of strategic materials and in encouraging defense production expansion ($.1 billion). A final item of $1.8 billion was allocated to military assistance to other countries. As we have indicated earlier, this last item could equally well be included under the second budgetary category, International Affairs.

The overwhelming portion of the national security outlay is administered, therefore, by the Department of Defense. Further consideration of this sector requires that we consider the breakdown of the department's budget into its separate components. Table 19–1 presents the proposed 1961 budget for the Department of Defense classified by object of expenditure. Table 19–2 presents the proposed 1961 budget classified by organization unit.

TABLE 19-1

Proposed Budget Expenditures—Department of Defense for 1961 Fiscal Year

	Expenditure (In millions)	
Military personnel, total		$12,146
Active forces	$10,741	
Reserve forces	611	
Retired pay	794	
Operation and maintenance		10,321
Procurement, total		13,602
Aircraft	$ 6,027	
Missiles	3,479	
Ships	1,644	
Other	2,451	
Research, development, test and evaluation		3,917
Construction, total		1,359
Revolving and management funds		(—) 350
Total, military functions		$10,995
Military assistance		1,750
Total, Department of Defense		$12,745

TABLE 19-2

Proposed Budget Expenditure, Department of Defense, by Organizational Component for 1961 Fiscal Year

	Expenditures (In millions)
Department of the Army	$ 9,383
Department of the Navy	11,683
Department of the Air Force	18,614
Office of Secretary of Defense	1,315
Total, military functions	$40,995

EXPENDITURE FOR MILITARY PERSONNEL

Federal outlay for military personnel makes up only slightly more than one fourth of the total budget for the Department of Defense. This proportion has been steadily decreasing as modern defense comes to be more and more of the push-button variety. In strict economics terminology, capital is being rapidly substituted for labor in the production of war potential.

The personnel of the military forces is also becoming more and more specialized. This change has led to a modification in the means of recruiting and maintaining personnel. The United States did not maintain standing armed forces of significant size during peacetime periods prior to World War II. Forces larger than mere token military units were recruited only during periods of active war or preparation for war. The post-Korean period has been characterized by two major revolutions in the history and development of United States military power. For the first time, Cold War strategy demands the maintenance in being of a large military establishment over long, nonwar periods of time. Secondly, the rapidly developing weapons technology demands more and more specialization in operating personnel. During war periods, military personnel has been recruited and maintained, in large part, through conscription or the threat thereof. In economic terminology again, some means other than price has been used to secure personnel for the armed services. It should be noted that this coercive recruitment of personnel is different from the more normal means through which governments, even in war, recruit capital goods. Tanks, planes, ships, and other war materials are purchased from suppliers in a market-like process, although the uniqueness of the government as purchaser creates somewhat special bargaining problems. But producers of such capital items are not conceived, normally, as being coerced directly into supplying the needed items for the military services at less-than-cost prices. The difference in policy between the procurement of personnel and the procurement of goods has led to the demand, in war periods, for the conscription of goods as well as personnel.

The coercive recruitment and maintenance of military personnel tends to break down in peacetime, especially when the demands upon personnel are becoming highly technical. The general ethical judgments of the society will not permit coercive maintenance of individuals in the armed services over periods of time long enough to justify the expensive and lengthy training which is essential to the

operation of modern weapons. If the draft cannot commit individuals to the armed forces for more than, say, two years, the rapid turnover of personnel makes the operation of a modern weapons system exceedingly inefficient and costly.

More and more the draft is being replaced by the price mechanism in military personnel policy, and it may be predicted that within a few years personnel will be secured exclusively in a manner analogous to goods. Price will be allowed to play its supply-motivation role in the purchase of personnel services as well as in the purchase of other goods and services. In the near future, already to a large extent realized, individuals may be expected to choose a career in the military service in the same manner that they might choose a career in medicine, accountancy, or other professions. So long as some coercion is required, so long as some use is made of the draft to recruit adequate numbers of military personnel, this is a clear indication that the price offered for services, that is, salaries for military personnel, is not sufficiently high.

The replacement of coercion by the voluntary method of recruitment can have major effects upon the efficiency of federal spending in the military sector of the budget. If the separate agencies within the Department of Defense are charged directly with the expenditure for personnel at market-determined prices, we can expect them to make much more rational decisions relative to the employment of men. A strong incentive will be provided to these subordinate agencies in the military establishment to economize on the use of personnel as well as on the use of equipment.

EXPENDITURE FOR OPERATION AND MAINTENANCE

Approximately one fourth of the defense budget is made up of expenditures for operation and maintenance of the complex and far-flung military establishment. This item includes the servicing and repair of the many items of "hardware" in the defense force: ships, planes, radars, and so on. It also includes the maintenance and operation of the many defense force bases, both within the United States and abroad.

This expenditure category includes the purchase of supplies and equipment, the hire or lease of capital goods, the hire of civilian personnel, the purchase of transportation and communication services, and a host of other miscellaneous activities involving some expense on the part of military units. This type of expenditure affects

many subsectors of the national economy, and it is difficult to discern any appreciable unique effect.

Increased efficiency in the use of federal funds falling under this budgetary category can be secured if each administrative unit, appropriately located, can be allowed to exercise somewhat greater latitude in making spending decisions. This reform, which has already been introduced to some extent, involves making the administrative unit more responsible for using its limited funds with the view that this will more or less automatically produce more effective utilization of these funds. In one sense the reform involves making the decision structure of the military establishment somewhat analogous to the decision structure of the private market economy.

This may best be illustrated by a simple example. Suppose that the prevailing system of obtaining clerical supplies (stationery, typewriter ribbons, pencils, envelopes, etc.) is for the tactical unit, say, a destroyer, to requisition these materials directly from a shore-based supply station. Upon the required completion of the numerous forms, and the presentation of the appropriate vouchers, the ship's supply officer would be given the desired materials. The cost of these materials would be charged to the ship through the general processes of auditing and accounting, but there would be no incentive for the ship's officers and men to economize on the use of such materials.

The alternative plan would be to allocate to each tactical unit, a destroyer in our example, a fixed sum of purchasing power. The unit would be allowed reasonably complete freedom in choosing how and when it used this purchasing power. If it purchases clerical supplies, the costs of these are directly entered against the account of the unit, and their purchase reduces the unit's ability to purchase other goods and services. While the unit could not "save" purchasing power in the normal sense, it could be allowed to allocate its spending on various supplies in the way it considers most efficient. If the destroyer's officers decide that somewhat more limited usage of clerical supplies would allow somewhat expanded purchases of recreational equipment, this would be open to them as a genuine alternative.

This system of setting up accounting prices for the purchase of supplies and materials could be greatly extended throughout the military services with sizable increases in efficiency. Administrative units could be required to purchase food supplies out of limited purchasing power made available to them in the accounting sense.

This would reduce considerably the wastage of food that normally characterizes military units.

Some semblance of pricing could even be extended to the level of the individual member of a military unit. Instead of issuing the recruit general issue uniforms which are to be replaced when worn out, the recruit may be issued a new uniform initially but granted a uniform allowance in dollars. If he takes care to preserve his uniform from wear, he may use the uniform allowance for other purchases. This system has recently been introduced in certain branches of the military establishment.

These limited examples will perhaps suffice to make clear the degree to which efficiency may be improved by introducing some analogues to market pricing into the military establishment. The limits to this usage depend only upon the administrative convenience of introducing such reforms. As the military establishment grows larger and more complex, the added efficiency that is to be gained from the use of accounting prices through the system becomes larger.

A second means through which greater efficiency may be secured in military operations and maintenance expenditure is a more careful examination and evaluation of the organization of operational facilities. Such questions as the following should be raised, and the attempt should be made to answer them by operations research and systems analysis methods if possible: Should land for the location of a military base be purchased outright or should it be leased? Should the operation of a Navy Yard be carried out directly by personnel employed by the Navy Department or should all specific jobs be contracted to private firms? Should the Army operate its own bakeries or should bread be purchased from private markets? Should civilian personnel in the employment of the Air Force be used to repair and maintain military aircraft, or should aircraft maintenance contracts be let to private companies?

No *a priori* answers can be given to these questions. The most efficient organization will differ from case to case. But these questions are particularly the sort that operations research can assist in solving. The criterion aspect of the problems is usually simple. For example, should the Army bake its own bread or roast its own coffee? Here the criterion is simply that of minimizing the cost of securing a given amount of bread or coffee per day, week, or month. Operations research should be able to determine the most effective organization form. By and large, experience since World War II has indicated that, for many such problems, a decentralized solution is the more

efficient. The student of economics would be prejudiced toward this answer in any case, since the decentralized solution does place greater responsibility on the individual decision maker. However, the absence of any general conclusions that can be reached in this respect should be re-emphasized.

EXPENDITURE FOR PROCUREMENT

In the 1961 fiscal year, the federal government proposed to spend more than $13 billion in procuring new weapons and other capital items related to military defense, exclusive of atomic materials. Procurement expenditures make up about one third of the budget of the Department of Defense, and this proportion is steadily rising over time. Procurement expenditures include the purchase of aircraft, missiles, ships, tanks, and other end items of military hardware. Aircraft and missile procurement takes up considerably more than half of the total procurement expenditure.

In the nondefense sector, government procurement of capital goods takes place through the process of competitive bidding as a general rule. The specifications of the item to be purchased are laid down and bids are invited. The contract is then let to the lowest bidder meeting the necessary qualifications. When military procurement is considered, however, the usefulness of competitive bidding is quite restricted. Specifications for modern weapons systems are so technical that the private firm must construct specialized production facilities before undertaking to supply a government order. Secondly, projected orders are so large that few companies can compete for contracts. Almost by necessity, procurement for military items becomes a process of delicate administrative negotiation between the Department of Defense, or the appropriate agency of the department, and the individual firm that is qualified to undertake production. Companies are sometimes unwilling to take on contracts that require delivery of items previously not produced unless they are guaranteed a return over their cost. This has led to the introduction of the cost-plus contract on many items. Firms negotiate to produce items of military equipment for the federal government and to receive a sum calculated at a fixed percentage over the full cost outlay.

It is not difficult to see that this cost-plus pricing of items of military hardware leads to inefficient usage of federal funds. Companies have little incentive to try to economize on the use of resources in producing to cost-plus contracts. They will tend to be less resistant

to demands for wage increases on the part of labor unions, and more reluctant to introduce cost-reducing innovations in production. It is in the area of procurement that federal spending is perhaps the most inflationary. As discussed in Chapter 7, the government tends in this case to be a highly inefficient purchaser. Resources employed by firms under contract to the federal government will be less productive than those producing for the private economy.

In modern military procurement, government spending must, almost by necessity, be conducted on the basis of administrative discretion and not in accordance with a predetermined set of rules of procedure. As a result, contracts in this area are always subject to personal relationships, which leave the door open to corruption of administrative officials. Little can be done to prevent this despite all efforts to the contrary. It is one of the prices that society must pay for excessively large military spending brought on by the armaments race. Certain procedures may be formalized, and penalties on error may be introduced. But, at best, military procurement must continue to be a modified form of bilateral monopoly, with a rather wide bargaining range. If military expenditures continue to remain at the high levels of the 1950's, a wholly new pattern of American industry will come into being. Large industrial units will come to depend, more and more permanently, on the securing of military contracts. As a result, there will be built into the political system some vested interest in a large defense establishment. Here is the real kernel of truth in the imperialistic hypothesis discussed earlier in Chapter 7 of the book. It is now to the short-run interests of major segments of the American business community and the American labor force that federal expenditures for national security remain large. Reductions in this expenditure will require considerable temporary dislocation. This consideration should not, of course, affect any public decision to reduce federal procurement spending drastically, if and when the Cold War should thaw and the opportunity presents itself. But a recognition of the dislocations caused must be incorporated into any over-all adjustment plan, and some governmental action to relieve temporary or short-run distress for both business and labor should perhaps be contemplated. Problems of this sort become more and more serious the longer the accelerated or abnormal federal outlay for military forces continues.

One indirect effect of large federal outlay for military procurement should be mentioned. It seems probable that this is one factor that leads toward greater concentration of industry in the economy.

If it is necessary to negotiate contracts for each item of military hardware, the larger business enterprises will be placed at an advantage in dealing with federal administrative officials. Contracts will tend to be placed with the larger firms, thus providing the larger firms with a competitive advantage over smaller firms in the same industrial grouping. Government officials have been recently subjected to rather severe criticism on this score, but little improvement on this natural tendency toward unduly favoring the larger firm can be expected.

Obligational Authority and Expenditures

It is in the category of military procurement that the greatest divergencies are likely to be found between the obligational authority to make expenditures and the actual expenditures undertaken. Military contracts must extend over a long planning period, and a projected expenditure may not be made until some time after the close of the period in which this expenditure was initially authorized. In recent years, the Department of Defense has normally carried a sizable accumulated backlog of obligational authorizations for spending, amounts that were authorized but not expended during the period of authorization.

This discrepancy between obligational authority and actual spending plans makes more difficult the task of the legislator in determining the actual needs of the military forces. If the Department of Defense indicates that it needs an additional $2 billion of expenditure authorization, the Congress might tend to question this request if it knows that, say $8 billion of previously authorized expenditure has not been undertaken. Some attempts have recently been made to improve this rapidly developing problem in federal financial administration through the usage of accrued expenditure accounting. But, as in the general problem of procurement, little improvement seems possible given the complex processes of modern weapons production. The Department of Defense must, in fact, make its budget plans over time spans exceeding one year, and the federal administrative budget must, on the other hand, continue to be considered on an annual basis. Conflicts and confusion between obligational authority to make federal expenditures and the actual process of expenditure seem likely to continue.

RESEARCH AND DEVELOPMENT

Although this sector of the military budget is relatively small (slightly less than $4 billion in the 1961 fiscal year), it is exceedingly important in the type of defense program currently in being. However, little can be discussed concerning the efficiency of such expenditure. Expenditure for basic research into new weapons technology must be highly uncertain, and the rewards may range from the negative to very high values. The results of any particular investment in research must be largely unpredictable by the nature of research itself.

Expenditure for development of existing research ideas is somewhat different. Some predictability can be incorporated into plans calling for expenditures on the development of military programs. But even here, the development process contains many uncertainties that should not be overlooked. Perhaps the single important contribution that an economic approach can make to development planning is that of causing decision makers to remain constantly aware of these uncertainties. The simple rule for development planning should be the old saw: "Don't put all your eggs in one basket." This suggests that expenditures for development may appear in many cases to involve duplication of investment in weapons ultimately designed for similar or identical purposes. But so long as important uncertainties remain concerning the operational performance of a weapons system, expenditures should not be exclusively committed to the development of the single system that appears to be "best" at any one period in the planning process. What development planning aims for is the "best" operational weapon system. But this can only be determined at the end of the developmental process, and that system appearing "best" halfway through the process may not ever become operational for many reasons. Sensible developmental planning must, therefore, involve the carrying forward of several alternative systems, progressively discarding the less efficient systems as the operational stage is approached.

These simple points are sometimes overlooked in the popular discussion on developmental expenditures. In the furore of public debate after the Sputnik was launched by the Russians, the Department of Defense was often criticized for allowing the American efforts in rockets and missiles to be uncoordinated, with each service unit responsible for its own particular program of development. This organization of developmental expenditure is not at all to be criticized

on the grounds of general principle. Competition is effective in the military establishment as elsewhere, and hastily conceived coordination of effect may nullify developments of weapons which will, over the long run, prove "best."

SYSTEMS ANALYSIS APPLIED TO MILITARY SPENDING

Operations research has proven to be helpful in increasing the efficiency of expenditure in many of the separate administrative units of the armed services. In one sense, operations research represents nothing more than a systematic search for and evaluation of alternative ways of accomplishing specific tasks. Quite clearly, this can be helpful in all instances where the task to be performed is reasonably well defined; the application of operations research methods can be extended from the performance of duties by the individual serviceman to the performance of tasks by reasonably large tactical units.

As suggested in the preceding chapter, systems analysis represents an attempt to extend the operations research approach to problems of decision making higher up in the decision-making hierarchy. A military example will make the distinction clear. Operations research methods may be applied to the choice of radar equipment on the B-58 bomber. This approach would assume that the decision to invest federal funds in strategic bombers has already been made, and also that the decision among the many possible designs of bombing planes has been made; only B-58's are considered. Systems analysis, as distinct from lower-level operations research, would not make such restrictive assumptions. Systems analysis would consider the whole weapons system together and try to apply systematic processes of evaluation to alternatives. The systems analyst would try to weigh the advantages and the disadvantages of the B-58 and all other relevant alternatives that might accomplish the same job.

Systems analysis is more useful in application to military spending than to other forms of federal spending. The reason is that the criterion problem becomes somewhat easier for military spending. Systems analysis is useful only if the task to be accomplished may be reasonably well defined in advance. As discussed in the last chapter, the "things" to be accomplished by government spending in general cannot be defined at all. But within the military budget somewhat more precise specification of criteria may be laid down, although even here care must be taken to keep in mind the possible restrictiveness of the choices made.

What is the aim of military spending? Even at this level the answer is not so clear. Two answers suggest themselves. First of all, the military force in being is designed to prevent the outbreak of general war. Second, the military force should be able to win a war if one is begun. These two aims may, in some important cases, conflict with each other. The military structure representing the greatest deterrent threat may not be the most effective in a war once started. It seems clear, therefore, that systems analysis at this most fundamental level of military decision making is limited in its applicability.

At slightly lower levels of decision making, however, systems analysis may be quite helpful in increasing the efficiency of military outlay. The aim of the strategic air force may, with some legitimacy, be defined as the effective delivery of destructive power on the enemy within specified periods of time. This represents a criterion that is subject to quantification. Once this definition of criterion is accomplished, the systems analyst may proceed to examine systematically all of the alternatives.

He will, first of all, examine the alternative weapons systems with little regard for cost or budgetary limitation. Only as a second step will he restrict his consideration of alternatives to those falling within a given budgetary constraint. At this stage, the problem confronting the systems analyst is converted to an ordinary maximization problem. How may the specified dollar expenditures be used so as to deliver the maximum destructiveness on the enemy within the specified time period? Although seemingly restricted, the systems analyst must now consider a wide range of alternatives. He must try to evaluate the comparative effectiveness of long-range and short-range bombers, the latter operating from overseas bases. He must try to evaluate the use of long-range missiles and short-range missiles. He must not leave out of account the use of submarines as missile launchers.

The analyst must, of course, place some definite estimates on many uncertainties in trying to arrive at a conclusion that will prove helpful to the decision makers. Suppose that careful systems analysis reveals that concentration on short-range missiles deployed in overseas territories would clearly deliver more striking power from a limited budgetary outlay. But how can this advantage of short-range missiles be offset against the greater uncertainty of political events in allied countries not directly subject to American political influence? This example points up the usefulness of systems analysis

but at the same time suggests its limitations as an aid to responsible decision making.

In one sense, military planners have always tried to make the best decisions possible concerning the allocation of limited funds. Systems analysis is nothing more than an attempt to incorporate somewhat more systematically into the decision structure the careful evaluation of all relevant alternatives. It is in this latter task that the approach of the economist can be very helpful. Individuals untrained in economics tend somewhat naturally to think in terms of the single "best" way of doing things. The economist tends to think in terms of alternative ways of accomplishing things, and he recognizes that all "good" things are secured only at some cost in sacrificed alternatives. As this approach is incorporated more and more into military decision making, we should expect that the efficiency of federal spending will increase.

CONCLUSIONS

The federal budget is dominated by spending for national security, and any consideration of the total impact of effects of federal spending programs must involve careful study of the military budget.

One means of looking at the impact of the military budget is in terms of the things that are purchased in the process of providing security. Expenditure directly for military personnel makes up about one fourth of the outlay of the Department of Defense. This proportion is becoming smaller as modern weapons become more technical and greater capital outlay is required. The use of the price mechanism to attract and to maintain military forces is also replacing the coercive method of conscription. Another fourth of the Department of Defense budget goes for operation and maintenance of military facilities. It is in this area of operation and maintenance that operations research can be most helpful in indicating the most efficient utilization of expenditures. Many improvements have recently been made in this respect, and as outmoded methods of procedure and tables of organization are gradually replaced, additional efficiency can be expected.

Procurement expenditure, already the largest item in the defense budget, will become more and more important. The state of weapons technology is such that competitive bidding for contracts is not administratively feasible. Administered or negotiated contracts are necessary, and even fixed-cost contracts are difficult to secure.

Cost-plus contracts are necessary in many cases. This, along with other factors, makes procurement expenditure the most inflationary in impact of all federal spending. Procurement procedures also tend to cause a greater concentration of industry than would be otherwise present. Research and development expenditures make up a relatively small, but important sector of the military budget. The main contribution of the economic approach here is that of demonstrating that competing development plans are not necessarily inefficient.

Systems analysis may be applied more readily to military planning than to other types of federal budgetary planning. This is because, to a certain extent, the objectives of military spending can be more easily quantified and measured. The systems analysis approach does insure that a careful evaluation of the relevant alternatives will take place in any decision making.

Chapter 20 FEDERAL NONDEFENSE SPENDING

In this chapter will be discussed the civilian or nondefense expenditures of the federal government, the remaining 40 per cent of total federal spending. It is sometimes suggested that far more than 60 per cent of all federal spending is attributable to future wars, present wars, and past wars. If foreign aid expenditures are attributed to the prevention of future wars, and the expenditures for veterans and for interest on the national debt are attributed to past wars, the total national security percentage rises from 60 per cent to 80 per cent of the administrative budget. The popular figure is that more than three out of each four dollars spent by the federal government is related in some way to national defense. In this chapter, however, we shall discuss, as nondefense expenditures, those falling within the 40-odd per cent not directly budgeted to Major National Security in the federal budget document.

The nondefense expenditure budget proposed for the 1961 fiscal year, classified by major functional categories, is shown in Table 20–1. It will be useful to discuss these separate expenditures as they are classified in the table.

INTERNATIONAL AFFAIRS AND FINANCE

In the decade 1950-60, federal expenditures for international affairs and finance, as classified in the budget document, have ranged from a low of $1.7 billion annually in 1954 to a high of $3.7 billion in 1951 and 1959. Slightly more than $2 billion were budgeted for this category for fiscal 1960 and 1961.

This category includes the costs of operating the whole Department of State, but the conduct of foreign affairs makes up only about 10 per cent of the total outlay included. An additional item of relatively minor importance is the expenditure for operating and maintaining the United States Information Agency.

TABLE 20-1

Federal Nondefense Expenditures Proposed for Fiscal Year 1961

	Proposed Expenditure (In millions)
International affairs and finance	$ 2,242
Veterans' services and benefits	5,471
Labor and welfare	4,569
Agriculture and agricultural resources	5,623
Natural resources	1,938
Commerce and housing	2,709
General government	1,911
Interest	9,585
Total nondefense expenditures	$34,048

The greatest proportion and expenditure falling under the heading of international affairs and finance consists of financial aid to foreign countries. Expenditure for economic and technical development in foreign countries has come to be an important item of the federal budget since World War II. The direction and composition of foreign aid expenditures have shifted markedly over the fifteen years between the end of World War II and 1960. In the immediate postwar years, aid was largely in the form of providing emergency relief to war-damaged economies. This temporary reconstruction aid was followed by the Marshall Plan, which extended aid to Western European countries from 1949 through 1953. This aid was aimed at helping the countries of Western Europe to revitalize more permanently their economic structures and to return to fully productive operation. Since the end of the Marshall Plan period, United States aid has been shifted toward assisting the so-called "underdeveloped" countries of the world to secure a more rapid rate of economic growth or development.

Expenditure for foreign aid is perhaps the most controversial item in the whole federal expenditure budget, and a major policy debate occurs each year when Congress is considering the administration's budget requests for this item. The argument here stems, of course, from the reluctance of the American taxpayers, as represented by the Congress, to finance purchases of American goods by foreign governments, when the resources could be effectively used to finance additional production in either the private or the public sector of the domestic economy. Redistributionist or equalitarian

sentiments are not strong when extended beyond national boundaries. Despite all pious claims to the contrary, humanitarian motives alone would not be sufficient to insure continued support for large-scale foreign aid expenditures. The support has come, in large part, from the argument that it is to the long-run strategic interest of the United States to grant large-scale foreign aid. This is held to be the most effective means of preventing the underdeveloped and largely uncommitted nations of the world from falling into the Communist camp. In a very real sense, therefore, foreign aid expenditures are also expenditures for Major National Security.

The effectiveness of foreign aid expenditure in accomplishing the purposes for which it is intended is also quite controversial. This discussion takes place on two planes; one introduces the technical efficiency of the expenditures, the other involves what might be called the "social" efficiency.

Almost by necessity, the process of granting foreign aid through the United States government involves the setting up of dollar credits against which purchases may be made in the domestic economy. And foreign governmental agencies must be initally charged with the responsibility of allocating these scarce dollars among the many possible things that might be needed and desired in the underdeveloped countries.[1] There is little assurance that the purchases actually made will reflect the most productive utilization of the scarce aid funds. Foreign aid can never be a fully effective substitute for private investment by American firms in foreign countries. The latter will tend to flow directly to those areas indicated as most productive by market standards.

A program of technical assistance complements the granting of aid funds. American experts visit foreign countries and advise public and private agencies in the establishment of modern industrial and agricultural techniques. In many respects, the technical assistance programs are the most useful of all the foreign aid expenditure.

Perhaps the critical issue concerns what we may call the "social" efficiency of the foreign aid expenditure. The gap between American living standards and those of most of the underdeveloped countries of the world is immense. This gap is so large that any conceivable program of aid can do little more than have a negligible effect. Absolutely, foreign aid expenditures may help to increase living stand-

[1]Important qualifications must be made to this statement. In many cases, the United States has required that certain proportions of dollar credits be expended on the purchase of surplus farm products in this country.

ards of underdeveloped countries substantially. But these increases must remain extremely small relative to the living standards in the United States and Western Europe. Because of this, citizens of the underdeveloped world are not likely to become more friendly toward the United States as a result of foreign aid. The social impact of greater foreign aid may be that of causing citizens to ask for even more, and to remain critical when a faster rate of economic growth is not achieved. The long and arduous process of economic development cannot be shortened or accelerated except within rather restricted limits, and the impatience with this process may generate social upheaval and disturbance. Therefore, in spite of all United States efforts, the underdeveloped countries may be led toward Communism, which appears to promise faster growth at the expense of personal freedom. The fact that the growth rate may not actually be faster under Communist or Communist-like control will not affect the attractiveness of this alternative greatly.

Regardless of either the technical or the social efficiency of foreign aid expenditures, we may expect these to continue. They represent a rather uncertain and groping attempt by the United States to attract the uncommitted peoples of the world to "our side" in the Cold War.

Foreign aid expenditure is, of course, one means by which a large creditor nation may adjust international balance-of-payments problems. In the early postwar years, citizens of other nations wanted to purchase more from the United States than domestic citizens wanted to purchase abroad at the existing rates of currency exchange. This created a dollar gap which was to some extent made up by the policy of granting foreign aid, a form of investing abroad. This was an alternative to either expanded private investment or expanded trade with other countries. But given the political instability of many underdeveloped countries and given the American political climate concerning tariffs, foreign aid was perhaps the most practicable means of making international adjustments. During the last years of the 1950's, the dollar shortage largely disappeared, and the United States experienced deficits in its over-all balance of payments. Its position as a net creditor remained, but public and private investment in other countries produced a drain on gold reserves. It seems possible that this situation, if it should prove somewhat long lasting in the decade of the 1960's, may cause some reduction in annual federal expenditure for foreign aid.

VETERANS' SERVICE AND BENEFITS

Federal expenditures for veterans' services and benefits averaged slightly less than $5 billion per year over the decade of the 1950's, and a sum slightly greater than this average was budgeted for the 1961 fiscal year. Expenditures falling within this classification account for almost one sixth of total federal nondefense spending.

Several points made earlier are well illustrated by expenditures made for veterans. The actual amount of annual expenditure here is determined by the basic policy toward the compensation of veterans which has been adopted in earlier legislation. Only in a very restricted sense can a budget decision be made afresh for each fiscal year. Substantial change in the amount here would require fundamental revision in national policy on hospital care, pensions, eligibility for benefits, and so on. Unless such revision is made, the federal government must meet the expenditure demands placed upon it, and the total is predetermined, at least to a large extent.

Somewhat more than three fifths of total veterans' expenditures represents compensations and pensions. These expenditures take the form of transfer payments, and they do not, therefore, exert so substantial an effect on the private economy as federal expenditures for goods and services. That is to say, the product mix of the economy is not modified to so large an extent as, say, with federal defense expenditures. Veterans' compensations are part of a fiscal transfer process that takes income or purchasing power from the taxpayer and shifts it to those who qualify as veterans eligible for service-connected or nonservice-connected pensions or compensations of some sort. Veterans make up one group which society chooses to subsidize through income transfers. A net redistribution of income is effected between taxpayers and veterans. This redistribution probably increases the equality of personal incomes in the society as a whole since means criteria are employed to some extent in determining eligibility for compensation. But the equalization of personal income that is accomplished is more or less incidental to the main purpose of the transfers, which is to aid veterans, as such.

Why should a democratically organized society choose to single out veterans as a group to be especially subsidized? Recall the discussion on military personnel in Chapter 19. Military conscription directly affects a rather small proportion of the total population, and veterans' benefits provide a means through which the whole society

"pays back" those who have been subjected to conscription in past wars. For injured veterans, the case for transfer payment is clear. These individuals may have lost a substantial share of earning power, a loss that was not compensated at the time of injury. Veterans' compensation represents some payment for this loss. Experience indicates, however, that the appropriate levels of compensation are extremely difficult to determine.

Although there are reasons why society should choose to redistribute incomes toward veterans through the fiscal process, the actual composition and magnitude of the transfer may not appear to reflect rational consideration. Perhaps to a greater extent than any other major category of federal spending, veterans' services and benefits are highly sensitive in a political way. Expenditures in this category, being primarily in the nature of direct transfer payments, provide benefits that are measurable and easily individualized. Veterans' organizations are large, and they take an active part in promoting the maintenance and expansion of these expenditures. Members of the Congress, and the executive, become reluctant to suggest reductions even where these might be possible. In one way of looking at the budget, veterans' expenditures may be considered as part of a larger "social compromise" that the federal budget reflects when it is finally adopted. A coldly rational decision maker bent on economizing, and possessing adequate decision-making power, might greatly reduce federal outlay on veterans. But decisions on federal spending are made by no such decision maker; there are many participants in the choices. And, when viewed realistically, federal expenditure on veterans may be "efficient" in that only by allowing these expenditures to remain relatively large can the remaining, and to some eyes more important, federal services secure adequate appropriations.

LABOR AND WELFARE

Labor and welfare, the third nondefense expenditure category to be discussed, is rapidly increasing in relative significance. Budgeted expenditures included within this classification have gradually been increasing, and, during the decade of the 1950's, these expenditures have approximately doubled in absolute amount, rising from $2 to $4 billion per year at an annual rate.

Expenditures falling within this classification are typically "social welfare" or "social service" expenditures. That is to say, these expenditures are made for the purpose, not of providing collective

goods directly, but of assisting certain social groups, either directly through the provision of specific services or indirectly through the provision of income subsidies. Broadly speaking, expenditures of this sort are redistributive in nature, more redistributive than other items of federal spending. Here as elsewhere, however, the redistributionist purpose is not explicitly evident in many cases.

About half of the total annual expenditure included within this classification, or about $2 billion, is devoted to the provision of federal financial support to public assistance. These expenditures are over and above those made under the social security program, which is financed, not out of general federal revenues, but out of special trust fund accounts. (These expenditures will be discussed in a later section.) Public assistance expenditures take the form of grants made to states which, in turn, provide direct payments to qualified and eligible recipients. Grants are made for old-age assistance, for aid to the blind, for aid to dependent children, and for aid to the disabled. Old-age assistance grants are the most important. Grants are made to states on a matching basis, with the amounts being determined by specific formulas. For old-age assistance, and for aid to the blind and disabled, the federal government finances four fifths of the first $30 of the monthly payment per recipient, and an amount ranging from 50 to 65 per cent of all payments above this, the exact percentage being determined by the average income level of the states. As a result of this means of allocating funds, the federal government finances almost 60 per cent of total payments made to the public under these public assistance programs.

This area of the government finances introduces complex problems concerning the relationships among the federal, state, and local units of government. These problems of multilevel finance will be thoroughly discussed in Part IX of this book.

The remaining half of federal expenditures within the labor and welfare classification of the administrative budget include a wide range of federal programs, many of which are also handled through grants-in-aid to the states and other administrative units. These include: (1) grants made to states for financing the costs of administering unemployment compensation programs, (2) grants to universities and other educational units under the relatively new defense education programs, (3) financial assistance to schools in federally affected areas, (4) grants made to the National Science Foundation for research and fellowships, (5) grants for medical research, (6) grants

for hospital construction, and several other programs of lesser importance.

A continuing debate may be expected to take place concerning the expenditure items contained in this category. Two separate issues in political and social philosophy are at the heart of any discussion on these topics. First, what responsibility does government have in looking after the private or individual welfare of its citizens? Attitudes and opinions on this issue have altered greatly during the last half century. The role of government in assuming at least a substantial portion of such responsibility is now widely recognized. In a very real sense, the government has replaced the family in many of these respects. Experience has shown, however, that additional security through the government can only be provided at some cost, cost that may be measured in a loss of personal freedom or in a reduced rate of economic growth. The events of the next half century cannot be predicted, but significant increases in welfare expenditures beyond those already provided for by the gradual aging of the population do not seem likely to occur. A more likely expansion of expenditure falling within this general budgetary category, but not appropriately labeled welfare expenditure, is that on investment in human resources, notably expenditures for education. When this issue is discussed, there arises immediately the second of the major issues in political philosophy that we have already mentioned. What is the appropriate level of government for the financing of educational and social welfare expenditures? Here the conflict between the centralist and the federalist approaches to the United States political structure comes into its sharpest focus. But, as suggested previously, the discussion of this must be deferred until Part IX of this book.

AGRICULTURAL EXPENDITURES

Expenditures for agriculture, which are exceeded in the nondefense sector of the budget only by interest on the national debt, have been increasing rapidly over the period following the Korean War. In the 1959 fiscal year, agricultural expenditures approached the $7 billion mark. The total expenditure in this classification depends upon the basic agricultural policy adopted by the Congress, and unless major changes are forthcoming in this policy, expenditures for agriculture promise to continue large.

Why should the federal government spend almost one tenth of its total budget on agriculture? To answer this question we must first

consider the form of the spending program. More than four fifths of the spending included in this category represent efforts made by the federal government to stabilize farm prices and farm income. Why should the federal government single out agriculture, as an industry, for major subsidization from tax revenues?

This brief survey of federal expenditures does not provide sufficient space to discuss the issues in great detail, but a few of the most important points may be made. First of all, it is useful to recognize that agriculture, in the American economy, is an industry that has been declining in relative importance over the last half century. Since the first decade of this century, fewer and fewer individuals have been employed in agriculture. In spite of this decline in the number of persons employed, agricultural output has continued to rise because of the revolutionary changes in production techniques. National income has also risen rapidly over the half century, with the exception of the Great Depression years of the early 1930's. But the rise in national income has not caused a proportionate increase in the demands for agricultural products. The demand for agricultural output depends rather closely upon population increase, and this demand is relatively insensitive or inelastic with respect to income changes. Therefore, the supply of agricultural products has increased over the half century at a more rapid rate than demand has increased.

If the industry had evolved in the normal manner, prices and farm incomes would have fallen rapidly over the period and would have continued to fall relatively to incomes elsewhere in the economy. This greater fall in farm prices and in farm incomes would have accelerated the shift of persons out of agricultural employments and into nonagricultural employments.

This normal evolution has not been allowed to occur with full effectiveness, however, because of the government policy. Attempts have been made to shore up the agricultural industry by preventing the declines in prices and in farm incomes that the forces of demand and supply would dictate. To understand why the government has singled out this industry for support requires a brief discussion of the impact of the Great Depression.

The depression was characterized by mass unemployment in industry. In agriculture, there was underemployment but not unemployment. Farmers continued to produce despite drastic price reductions. With some legitimacy, farm bloc supporters argued that if the federal government should come to the support of industry by

directly increasing employment the same sort of support should be granted to the agricultural sector in supporting farm prices and farm incomes. In other words, if the federal government was to support industry by "buying up" the unemployed through the WPA, PWA, CCC, and so on, it should also support agriculture by "buying up" surplus farm production. Out of this sort of thinking, the agricultural policy of the New Deal was born. This policy involved two approaches to the problem. The first was an attempt to destroy existing supply and to reduce future supplies, while the second was an attempt to institute government purchases in order to keep prices above market equilibrium levels. Only the second policy was found to be effective.

The concept of parity price was introduced, "parity" being defined as some ratio that would provide farmers with "terms of trade" with the nonfarm sector of the economy comparable to that enjoyed in the 1910-14 period. This parity ratio was then used to determine the level at which the federal government would support agricultural prices.

This support policy was extended into World War II, although no support for farm prices was required during that period. The policy error, at least in the minds of most observers, occurred in the post–World War II years when farmers were promised that the federal government would continue to support agricultural prices at parity or high percentages of parity. Production increased rapidly in the years following the war, and the modern problem of ever-mounting surpluses came into being. The federal government found itself committed to purchasing huge quantities of agricultural commodities each year for no other reason than that Congress had determined that farm prices should be no lower than certain levels. "Parity" had, by this time, taken on a certain connotation of "fairness" or "justice" toward the agricultural sector.

After 1953, the Eisenhower administration had some success in reducing the level of price supports. Instead of supporting basic commodity prices at full or 90 per cent of parity, the support levels were lowered on several commodities. In spite of these efforts to move support levels closer to the equilibrium prices, surpluses continued to mount because of the rapidly rising agricultural production. Instead of growing smaller, the annual federal outlay on agriculture became progressively larger.

The price support program has, of course, created the major problem of effective disposition of the surplus agricultural com-

modities acquired by the Commodity Credit Corporation. Some of these surpluses have been given away in the form of relief, foreign aid, and similar programs. Some of the commodity surpluses have been sold at below-domestic-market prices to foreigners, "dumped" on foreign markets. As a result of the latter practice, United States international relations with certain countries have been noticeably endangered. For the most part, however, the government has continued to accumulate surpluses without effective disposition. Storage facilities are continually expanded to take care of the surpluses, and much of the material simply becomes unfit for consumption through physical deterioration.

Attempts were made in 1956 to introduce a new plan for a reduction in the number of acres devoted to agricultural production. This was called the "soil bank" plan. Its effects were identical with the earlier efforts to solve the "farm problem" in this way. Farmers produced greater amounts on fewer acres while collecting the federal subsidies for keeping acres out of production.

The federal program of price supports illustrates well the attempt by public authorities to keep prices above equilibrium or market clearing levels. Surpluses must arise unless supply is effectively reduced. The desired long-run adjustment of the agricultural industry is slowed down; more resources are devoted to agricultural production than the needs of the economy dictate.

But the long-run adjustment process has been taking place in spite of the federal programs. Farmers are becoming fewer and fewer in number, and this fact suggests that this major item of federal spending stands perhaps a better chance of being substantially reduced than any other. The strength of the price support programs has been based upon the disproportionate political power of the farm bloc in the political decisions of the nation. As this bloc comes to represent a smaller number of people, this power will diminish somewhat and the effectiveness of groups desiring some reduction in federal spending for agriculture will increase. In the late 1950's, approximately two fifths of all farm income was provided through government programs. This proportion is so high that it cannot long continue. Although complete elimination of the particular subsidization of agriculture seems a long way off, some substantial reduction in the amount of the subsidy seems almost certain to take place over the ensuing decades regardless of the political climate.

NATURAL RESOURCES

Relative to the other major functional categories in the administrative budget, federal expenditure on natural resources is rather small. The total annual expenditure reached $1.7 billion in fiscal 1959 and 1960. But in absolute terms, $1.7 billion is a large total, and the controversy surrounding these expenditures suggests the decisive importance of the programs falling within this category.

Two thirds of the expenditures falling within this category are devoted to the development of water resources. These take the form of expenditures for flood control, navigation, electric power generation, irrigation projects, over-all river valley development, and related activities. The remaining one third of natural resource expenditures involve such programs as the preservation of fish and wildlife resources, forest resources, mineral resources, and others.

Federal spending programs falling within this classification receive a disproportionate amount of discussion for several reasons. The most important is that the benefits from such programs almost always are concentrated in particular geographic areas. Therefore, the pressure on individual representatives in the Congress to secure appropriations of federal funds for local projects is immense. This category of expenditures, along with those for veterans' services and for agriculture, is recognized to be extremely sensitive politically.

Expenditures on natural resource projects lend themselves more easily to economic analysis than other items of federal spending. Numerous attempts have been made in recent years to apply more rigorous standards of efficiency to the decisions regarding the choice of projects. A substantial proportion of all expenditures made on natural resource projects is actually administered through the Army Corps of Engineers and the Bureau of Reclamation of the Department of the Interior. Both of these agencies have, for many years, tried to introduce systematic methods of choosing among federally financed projects. It is here that the use of the cost-benefit ratio was developed, a technique discussed in Chapter 18. In choosing among irrigation projects, for example, attempts are made to estimate the total benefits to be expected from each project, and then these benefits are compared with the relative costs of the projects. Even if we may disregard the conceptual difficulties involved in the cost-benefit type of analysis (difficulties that have already been discussed briefly in Chapter 18), major issues tend to be overlooked through this approach. For example, the benefits from opening up an additional

California valley to irrigation may appear quite large relative to the cost of the undertaking. But should the benefits from the irrigation project include the market value of the agricultural produce when the federal price support program is of major importance in keeping agricultural prices relatively high? Here we find the government subsidizing the production of additional agricultural commodities on the one hand and buying up surplus production on the other. The inconsistency between these policies is apparent, but both have been continued, again due largely to the way in which budgetary decisions are actually made.

A second major issue involved in the discussion of natural resource expenditures concerns the degree to which federal tax revenues, collected from all of the citizens of the nation, should be used to undertake projects whose benefits are geographically concentrated in certain specific areas of the country. Here we encounter, in a real case, the asymmetry between the tax and the expenditure sides of the fiscal account to which we have referred several times before. Geographically discriminatory federal taxation would be unconstitutional under existing interpretations of the law. But geographically discriminatory expenditure is not unconstitutional. This asymmetry prevents the federal government from imposing special benefit-type taxes on the residents of the areas directly affected by federal spending programs on natural resources. As a result, the programs that are undertaken with federal funds represent a net transfer of income from the taxpayers as a group to the particular residents of project areas. Through this process, the individuals living in the arid western states especially have been subsidized by the individuals living farther east. This net transfer has probably been redistributory in the direction of greater, not less, inequality in incomes since the average income level of the western states is high.

A return of these functions to the state units of government might seem to be the appropriate solution here, but this is prevented in many cases by the nature of the projects. River valley development normally involves several states in a region, and, for this reason, independent state action is not likely to be fully effective. In the absence of regional authorities, the federal government has stepped in to handle, and to finance, the genuinely interstate resource projects. Some solution might be found through the wider usage of interstate compact arrangements, but no effective start has been made toward this end. Continued federal financing of such projects may be predicted, accompanied by strong pressure for expansion on the part of

benefited regions and by strong, but less concentrated, opposition on the part of federal taxpayers generally who will object to the net income transfers accomplished through the projects.

COMMERCE AND HOUSING

The commerce and housing expenditure category is the most heterogeneous of the whole federal budget. Included are many federal programs, among which are the following: Civil Aeronautics Board, Federal Aviation Agency, Coast Guard, Panama Canal, postal system, Urban Renewal Administration, public housing programs, Federal Housing Administration, Federal National Mortgage Administration, Small Business Administration, disaster relief, and still others. The outline discussion of this chapter permits more detailed examination of no more than a few of these programs.

Each of these expenditure programs represents a response to a specific need for collective action. Whether or not the federal government is the appropriate unit to meet these collective needs seems questionable for many of the programs. For example, expenditures for urban renewal or slum clearance do not seem appropriately to fall within the scope of federal government purposes. To be sure, general benefits do result from the removal of city slums. But the primary beneficiaries here are the residents of the urban communities themselves, and there seems no reason that local or state financing should not be the primary means of financing this public service.

By contrast, federal financing of some system of regulating air traffic seems essential. Federal financing of airport construction seems less so. This introduces another issue that is frequently encountered in discussion of separate programs within this expenditure category. To what extent should public services be financed out of user charges? The users of the nation's airways should perhaps be made to finance all of the charges properly attributable to air traffic control, airport construction, and so on. Similarly, the users of the nation's postal system should finance fully the costs of this system since there seems no reason why these individuals, as a group, should be particularly subsidized. The postal system is, of course, largely self-supporting. But full self-support would remove all expenditures for postal service from this over-all expenditure category in the federal budget. These are a few examples of the problems that might come up in any careful discussion of the various programs in the commerce and housing category of the federal budget.

GENERAL GOVERNMENT

Only $1.9 billion out of a total federal administrative budget of $79.8 billion proposed for fiscal 1961 was budgeted for general government. The relatively small amount of this item is often emphasized by those who wish to counter arguments about the increasing size of the governmental bureaucracy. This expenditure category includes all the expenses of actually operating the federal government through the regularly constituted executive, legislative, and judicial branches. The salaries of civil servants make up the most important object classification in this category, and more detailed discussion of this category would involve further consideration of federal personnel policies.

INTEREST

Interest on the federal debt amounts to more than $9.5 billion annually. This item is second only to major national security in the federal budget. The problems faced by the Treasury Department in managing the national debt and in meeting this annual interest charge are important, and they must be considered. Part VI of this book is devoted to a discussion of the national debt, and, for this reason, no particular discussion of interest as a major federal expenditure will be undertaken here.

TRUST FUND EXPENDITURES

Each of the major functional categories of expenditure in the administrative budget of the federal government has been discussed briefly. As indicated in Table 20–1, these expenditures totaled to $79.8 billion for the fiscal year 1961, as proposed. Actual federal spending exceeded this total by more than $16 billion. Total federal outpayments amounted to approximately $96 billion in fiscal 1961. The difference between the total of federal government outpayments to the public and the total expenditures included in the administrative budget submitted to the Congress by the President is explained by the operation of federal trust funds.

Trust fund expenditures were estimated to exceed $21 billion in fiscal 1961. The discrepancy between this figure and the $16 billion difference between the administrative and the cash budget expenditure totals is explained largely by the approximately $4 billion in intragovernmental transfers. Federal expenditures out of trust fund accounts have been increasing at an accelerating pace since

World War II. Over the decade of the 1950's, trust fund expenditures rose from $3.6 billion in 1951 to a proposed $22.5 billion in 1961.

Trust fund expenditures are distinguished from regularly budgeted federal expenditures because of the fact that special revenues are designated or earmarked for particular expenditures. These revenues flow into special trust fund accounts that are set up, and the expenditures are made directly from these accounts, not from the general revenue account of the federal government. In one sense, each trust fund account is a little budget in itself.

Social Security Expenditures

The major reason for the rapid increase in trust fund expenditures in recent years has been the growing size of payments made under the Old Age and Survivors Insurance Act, or social security. Expenditures for social security payments make up slightly more than half of the $22.5 billion total. Social security payments are financed by taxes levied on both the employee and the employer. These employment taxes will be analyzed more fully in Chapter 25. From the origin of the federal system of social security, there has been a continuing debate concerning the merits of organizing the system on an actuarially sound financial basis. If the system is to be actuarially sound, individuals and employers must be required to contribute over the individual's working lifetime an amount sufficient, when interest is accumulated, to finance fully the payments to be made to the individual over his retirement years. The idea of an actuarially sound system is, of course, the rationale for setting this system up in a special trust fund account all its own. As opposed to this system, there have been proposals to administer the whole system out of the general revenues of the federal government. As it has worked out, the system in operation is supposed to be actuarially sound. But benefits have been increased more rapidly than would have been dictated by fully rational accounting, or, conversely, rates have not been increased sufficiently to keep up with increased benefits. Although the employment taxes have thus far brought in sufficient revenues to finance the major part of social security outpayments, the financial integrity of the trust fund stands in danger of being lost unless rates are increased rather rapidly over ensuing years. As more and more individuals who are eligible for social security reach retirement age, the demands for payments will increase rapidly in the 1960's. Without sizable increases in rates, the trust fund will be unable to meet these expenditure needs. In such a case, it will be

necessary to utilize general revenues of the federal government to "bail out" the trust fund. The danger of this taking place is increased by the pressure to expand benefits from social security due to the continued inflation that has taken place.

The experience of the Old Age and Survivors Insurance Trust Fund illustrates the difficulties that arise in any attempt to set up special accounts apart from the federal budget. So long as both contribution rates and benefit rates are subject to determination by the ordinary decision-making processes, the trust fund account cannot really be made actuarially sound. The temptation placed on political decision makers to expand benefits and to keep contributions from increasing has proven too strong to resist.

Highway Trust Fund Expenditures

The second most important trust fund account was established in 1956. At that time, certain revenues from federal excise taxes on gasoline and tires and other highway user taxes were earmarked for this trust fund, and expenditures from this fund were authorized in order to finance the federal 90 per cent share of construction of the Interstate Highway Network along with other continuing programs of federal aid to highways. Expenditures from this account will gradually rise throughout most of the decade of the 1960's. In fiscal 1960, these expenditures amounted to an approximated $3 billion.

The whole problem of financing highways will be discussed more carefully in Chapter 38. No further discussion here is needed except to indicate that the relatively brief experience with the highway trust fund also illustrates the difficulties discussed with relation to the social security fund. In 1958, as a response to the recession, Congress authorized an accelerated expansion in expenditure on the Interstate Network, expenditures that were in excess of current trust fund receipts. The pay-as-you-go principle of financing, which was the basis of the separate highway trust fund, was temporarily abandoned. As a consequence, revenues for federal expenditures on the Interstate Network were endangered in 1959. This made it necessary for President Eisenhower to recommend an increase in federal gasoline taxes in the 1960 budget document. Congress responded by increasing the rate by one cent per gallon.

There are many other trust fund accounts, and these will not be discussed in detail here. These accounts include: Railroad Retirement, Disability Insurance, Federal Employee Retirement, Unem-

ployment Trust Fund, Veterans Insurance, and the Federal National Mortgage Association. Each of these funds is characterized by an earmarked source of revenue separate from general tax revenues.

CONCLUSIONS

Even a brief survey of the nondefense expenditures undertaken by the federal government provides some appreciation of the varied projects financed in some way through federal funds. An interesting challenge to the student would be to attempt to classify all public services that the federal government finances into the three categories discussed in Chapter 3. Recall that these three categories were: collective goods, quasi-collective goods, and private goods publicly provided. It is clear that some of the goods or services provided by the federal government fall under each of these three classifications. For example, the expenditures for foreign aid must be classified as aimed at providing genuinely collective benefits to the nation. Federal expenditures to provide quasi-collective services involve such programs as public housing, aid to hospitals, and irrigation projects. Postal services, highways, and goods of this nature are primarily private but publicly provided. Then, in addition to this classification for the so-called "productive" expenditures of the federal government, we must add those expenditures that take the form of transfer payments from one group of citizens to another. Such items as veterans' benefits and public assistance payments may be classified under this heading.

Strong and effective arguments can be made for a continuation and even an expansion of federal expenditure on each of the programs discussed in this chapter. But, at least for most of them, strong and effective counterarguments can be made that the programs should be reduced in scope or eliminated. The costs of publicly provided services can only be measured in terms of alternatives sacrificed. For each dollar expenditure on a specific federal program, one less dollar's worth of resources is available for production of either some other public service or some private good or service. In assessing the whole federal expenditure program, the observer must try, as best he can, to weigh costs against benefits. For some subsectors of the budget, analytical and scientific aids may be applied quite effectively in assisting the decision maker toward more rational choices. For other parts, the resort to the scientific approach will be of little or no assistance. And the observer must remain aware at all times of the

inherent interdependence of the whole expenditure pattern. The federal expenditure budget, even when defense spending is left out of account, includes too much for the single decision maker or observer to comprehend effectively. The actual decision process on federal expenditures must be fragmented and decentralized. But overly close attention to the making of sectoral decisions can lead to error in thinking that the separate parts of the budget are independent of one another.

As it becomes more and more apparent that the federal government is likely to continue to retain the disposition of about one fifth of all resources in the nation, increasing attention is being, and will be, paid to problems of securing greater efficiency in the utilization of these resources. Progress in federal expenditure and budget planning seems certain to occur. More and more parts of the federal budget will be subjected to rigorous, analytical scrutiny, and gross inefficiencies will probably be eliminated. On the other hand, as the federal government becomes more and more important, individuals will come to think of the federal expenditure capabilities as being unlimited. It is always difficult to secure proper comparison of benefits and costs in the operation of a fiscal system. The further removed this system is from the life of the individual citizen and the larger the "fisc," the more difficult becomes this proper marginal balancing of benefits against costs.

SUPPLEMENTARY READING

As supplementary reading for this chapter, the student is advised to secure the latest budget document of the United States Government and to spend an hour or so getting some close-hand "feel" for the vast federal fiscal operation.

Part V FEDERAL TAXATION

This part of the book covers material that has traditionally received major emphasis in standard introductory textbooks. The first five chapters discuss the primary federal revenue sources, both in terms of general principles of taxation and in terms of the particular applications in the United States fiscal system. No attempt is made to examine in detail the characteristic features of each federal tax.

The concluding chapter in Part V examines inflation as a tax. Sober assessment of current political attitudes suggests that a portion of federal government activity may be financed, not by taxation as such, but by inflation of the currency. In a period in which currency inflation leads to an increase in the price level, this process can best be considered as one form of taxation, and it should be analyzed as such. Only in this way can this method of financing public services be compared properly with other methods.

Chapter 21 PERSONAL INCOME TAXATION: CONCEPTUAL PROBLEMS

Before describing the personal income tax as it exists in the United States, it will be useful to discuss some of the problems and principles of personal income taxation considered more generally. This introductory discussion will provide a frame of reference for the descriptive discussion that follows, and some of the currently controversial issues in personal income taxation can be appreciated only in broader context.

THE DEFINITION OF INCOME

What is meant by the term "personal income tax"? At the elementary level of discussion, the term suggests a coercive levy by government on the individual or person with income as the criterion for determining tax liability. The individual is the subject of the tax, and income is the base. But serious problems arise if any attempt is made to define terms more precisely. What is "income"? The appropriate definition of income for tax purposes has continued to be one of the most perplexing problems in fiscal theory.

There are two ways of defining income for determining tax liability. The first conception may be called a *flow* conception of income, and the second may be called an *accrual* conception. In the flow conception, income is defined as a flow of real goods and services to the individual or designated unit during a specified period of calendar time. Since heterogeneous goods and services cannot be added together except in terms of money values or prices, real income must be measured in money units. This conception of income is the standard one employed in economic theory and in accounting, and it must be used in determining the capital values of real assets and claims. The incorporation of this conception of income in taxation represents

a straightforward extension of the more general meaning of income in nontax uses.

In the second approach, income is defined as the maximum amount of real goods and services that may be consumed over a period of calendar time without reducing the value of real capital. The distinction between this and the first definition is that, whereas the first measures income in terms of a flow of real services to the economic unit, the second measures income as the addition to the size of the wealth of stock of assets, which may or may not be converted into a flow. For many applications, the two definitions reduce to one and the same. For example, in a closed national economy, the net flow of goods and services received by all individuals in the economy must be equal to the total amount of consumption that could possibly be achieved without "eating up" real capital. The two definitions produce quite different results, however, when applied to the problems of determining personal tax liability under the income tax. The fundamental differences between the two lie in the treatment of the increased value of capital assets owned by individuals, in the treatment of income saved, and in the treatment of gifts and bequests.

Although these specific differences in treatment may be discussed later, we may illustrate here by reference to the treatment of capital gains. Are capital gains legitimately to be counted as personal income? Under the flow conception, increases in the capital values of real assets or claims are not included in personal incomes. This may be illustrated by a simple arithmetical example. Suppose initially that an individual owns a real asset that yields an annual income of $100 over and above full allowance for depreciation and maintenance. If the market rate of interest is 5 per cent, this asset will have a present value of approximately $2,000. Now suppose further that something changes to cause the owner to expect that, instead of $100, the asset will begin to yield $150 per year. The capital value should immediately rise to $3,000. The owner will have enjoyed an unrealized capital gain of $1,000. Is this gain to be counted as personal income at the time that the expected future income increment is capitalized into a higher present value? Under the first or flow conception of income, no additional income has been received by the owner of the asset since the increased flow of real goods and services will only begin to take place in future periods. Under the contrasting accrual conception, the individual has received an addition of $1,000 to his income because he may, if he desires, now sell one third of the asset for $1,000, convert this into real goods

and services to be consumed currently, and still retain an asset with a capital value of $2,000, the same as he had before. The capital gain, even though it is unrealized, constitutes income under this conception, and it should be included in the tax base.

At this point, we shall not discuss further the relative merits of these two income conceptions. As we shall see in Chapter 22, the income tax, as actually administered in the United States, is not fully consistent with either conception. But the issue concerning the appropriate treatment of capital gains remains a highly controversial one, and this issue, along with others, will be explored more thoroughly in Chapter 23.

BASIC PROBLEMS OF MEASUREMENT

Once an acceptable definition of income is agreed upon, more specific measurement problems begin to arise. How can personal income best be computed? If all income were received in the form of wages, salaries, dividends, royalties, or similar income shares there would be little conceptual difficulty in measurement. But all income is not received in this way. Income may be received outside the ordinary monetary mechanism; instead of money income, which may readily be measured, the individual may receive income in kind. Income in kind is defined as the total of real goods and services received in some manner other than ordinary monetary units. Real goods and services directly received constitute income in kind. The most familiar example is provided by the farmer who grows his own vegetables. Since the consumption of these vegetables allows the farmer to reduce his spending on vegetables in the market, the value of the home-produced vegetables is clearly real income. But how can the total value of this income in kind be estimated properly?

The farmer's home-grown vegetables are the easiest of all sorts of income in kind to measure however. What about the income produced by the services of housewives? There is no doubt but that these household services produce real income; the household would have to purchase some such services through the market place with money unless they were performed by the housewife at home. But how can any criteria for tax liability be adjusted so as to include some estimate of these elements of income? On the other hand, unless some such estimates are included in the calculation of the tax base, can real income be said to be the true base of taxation? Similar difficulties arise when we consider the real income produced by householders in performing all sorts of do-it-yourself activities.

The durable goods possessed by the individual family also yield real income in any given period of time. Should this income be included in the tax base? The estimated rental value of an owner-occupied dwelling house is subjected to the income tax in some countries, but not in the United States. But the exclusion tends to place a premium on homeownership relative to the rental of housing accommodations. Similarly, real income is surely yielded to the individual through the ownership of an automobile, a high-fidelity phonograph, and all of the other so-called "consumer durables." The estimation of the real income yielded by these items would be extremely difficult in practice, but unless such income is included in some way, relatively too many resources tend to be devoted to the production of these goods.

Even more complexing problems arise when a portion of the individual's compensation from his employer is received directly as income in kind. It is almost impossible to separate that part of such compensation that is real income to the individual and that part that is representative of necessary outlay to the employer. The most characteristic modern form of this is expense account compensation. The businessman who travels for his firm does so on an expense account. He is not obligated to pay personal income tax on this part of his total compensation, because, presumably, the expenses he undergoes constitute genuine costs of carrying out the duties of his position. But it is clear that some part of many business expenses is real income in an ordinary sense. The failure to include this part of real income in the tax base leads to the continuing increase in the use of this device as a means of escaping tax liability.

Perhaps the most difficult of all measurement problems lies in the impossibility of measuring real income in any "opportunity cost" sense which, conceptually at least, should be the basis for computing tax liability. This point can best be illustrated by an example. A particular individual may desire to live in Florida rather than in New England, and in order to satisfy his desire he will accept a lower salary in Florida than he would in New England. Let us say that he will accept a Florida salary of $5,000 per year and a New England salary of $6,000. Presumably, in this example, the individual we are considering is no better off in New England at the $6,000 salary than he is in Florida at the $5,000 salary. Therefore, the $1,000 nonpecuniary differential should be counted as real income to the Florida resident. Otherwise, taxation based on money income alone will tend unduly to favor those occupations and those communities

possessing net nonpecuniary advantages. Quite clearly this is a measurement difficulty that can never be surmounted satisfactorily in the actual organization of a personal income tax law. But the example does illustrate well the immense gap between the ideal conception of the personal income tax and its actual working out in practice.

NONINCOME BASES FOR TAX DISCRIMINATION

The personal income tax, as normally administered, is not based solely on income, even if definitional and measurement problems could be effectively solved. Some important criteria other than income always exist for the determination of tax liability. Each individual receiving the same income will not be subjected to an equal amount of tax; several nonincome differences among individuals are held to be relevant in determining the tax load. To subject all individuals receiving identical incomes to the same tax burden would be held to violate the principle of "equity" or "equal treatment for equals" that we have previously discussed.

One of the most significant of these nonincome differences is family size. Normally, there will be only one income receiver per family unit. The size of the tax liability placed on the head of the family will be inversely related to the number of dependents which he must support. Some specific allowance for dependents will, therefore, be found in all fiscal systems using the personal income tax as a revenue source. In many cases, dependents need not be members of the immediate family. One interesting, although limited, means of looking at the allowances for dependents is the following: If children are considered to be similar to consumption goods for the family, the introduction of dependents' allowances in the tax structure represents a subsidization of this form of personal income. Individuals are provided with a special incentive to take their personal income in the form of more children rather than in other forms.

Another characteristic that is sometimes introduced to distinguish among individuals for tax purposes is age. In the United States, persons over sixty-five years of age are given double personal exemptions. Similar treatment is given to persons who are blind.

A more widely employed distinction among persons, although it is not incorporated in the United States tax structure, is that between income earned from work and income earned from the ownership of assets. This amounts to discriminating among individuals in accordance with the source as well as with the size of their incomes.

This is one feature of the income tax in Great Britain. Income received from wages or salaries, so-called "earned income," is given more favorable treatment than is income received as a return on capital assets, such as dividends, interest, and rentals. This distinction is justified in the following way. The owner of a capital asset is allowed to deduct full allowance for depreciation and maintenance of the asset before computing the net or taxable income. Human beings are, economically speaking, capital assets; in order to maintain and to replace the individual human being, some expenditure for consumption goods and services is essential, just as is the allowance for depreciation and maintenance for the nonhuman capital asset. However, it would be impossible for any actual tax system to distinguish between that portion of consumption that is necessary to account for the depreciation of the human being and that portion which represents real income more genuinely measured. Some compromise with the ideal must be accepted here. One such compromise is that of allowing some differentially favorable treatment to those persons earning income from work. The degree of differentiation must remain, in any case, somewhat arbitrary.

This argument is perhaps convincing, providing that the income from assets is not subjected to additional taxation somewhere in the system. If, however, dividends, for example, should be subjected to a supplementary income tax as it is received by the corporation, there seems to be no reason for differential treatment against this sort of income at the personal level. This fact apparently has served to prevent any particular discrimination in favor of earned income to be introduced into the American tax structure.

DISCRIMINATION BY INCOME SIZE: PROGRESSIVE TAXATION

One of the characteristic features of the modern personal income tax is its discrimination among individual taxpayers in accordance with the size of income received. In other words, the simple use of income as a tax base would suggest a common rate of tax independent of income size. But modern tax systems almost invariably include tax rates that vary directly with income size. That is to say, modern income tax systems are normally *progressive*, rather than *proportional* or *regressive*. It is necessary to define these descriptive terms carefully at this point.

The proportional tax or tax structure is the easiest to define. A proportional tax is one for which the rate does not vary as the tax

base varies. In terms of an income tax, proportionality would suggest that the individual is subjected to the same rate of tax on his adjusted income, as measured, whatever the size of this income happens to be. For example, if the rate were 10 per cent, an individual with an income of $1,000 would be obligated to pay $100, while the individual with an income of $10,000 would be obliged to pay a total tax of $1,000. Strictly speaking, proportionality as a characteristic relates the tax rate to the specific tax base. But some confusion is present when the attempt is made to relate the effective rates of one tax to some assumed ideal base. For example, most excise or sales taxes are proportional, strictly speaking. If the sales tax is 2 per cent of sales, this is a proportional tax since this rate does not vary. But it is sometimes said that the sales tax is regressive rather than proportional. This means that, if income rather than sales is used as a base, the effective rate of tax on income may be regressive. Care must be taken to use these terms clearly and precisely.

A progressive tax is defined as one in which the rate increases as the tax base increases. A progressive income tax imposes a higher rate of tax on individuals with the higher incomes than on individuals with the lower incomes. For example, if the individual with a measured adjusted income of $1,000 is subjected to a 10 per cent tax rate, the individual with an income of $10,000 might be subjected to a 20 per cent rate, while the individual with $100,000 might be subjected to a 50 per cent rate. Another way of defining progression in a tax rate structure is to say that the average rate of tax on income is lower than the marginal rate of tax. The average rate is calculated by dividing the total tax bill by the total income. The marginal rate is calculated by dividing the added tax on the last increment of income by the total size of the last increment of income. Marginal rates of tax reach almost prohibitively high limits in the modern income tax structures of Western democracies.

A regressive tax is defined as one in which the tax rate decreases as the tax base increases; the rate of tax and the base are inversely related. Regression is not characteristic of the modern income tax, and in the strict sense, few regressive taxes are to be found. Some forms of tax that are nominally proportional in rates may, however, be classified as regressive if these taxes are related to income as the base. As suggested previously, it is in this way that many excise or sales taxes are held to be regressive.

Almost without exception, modern income taxation excludes the lowest-level incomes from tax liability. Some exemption is included;

if income falls below this minimum, no tax liability is imposed on the income recipient. This feature of modern income taxation is explained on both administrative and ethical grounds. It would be very difficult to administer an income tax that subjected all incomes to tax. And, ethically, the taxation of the lowest incomes has been ruled out on the argument that a certain existence minimum is necessary for human survival. The combination of an existence minimum and a proportional rate structure above this minimum will result in an over-all tax that has some degree of progressivity. Such a tax is not usually classified as progessive; however, some writers have defined this as a degressive tax.

As suggested, almost all modern systems include an existence minimum that is wholly exempted from tax, and they include a structure of progressive rates above this minimum. Income taxes, as they actually exist, are highly progressive. As we shall see later, the fact that different levels of income are subjected to differing rates of tax creates many of the problems in income tax administration.

THE BASES FOR PROGRESSIVE TAXATION

It is important to understand the principle upon which modern income tax progression is based. One of the traditional principles for the distribution of total tax liability among individuals has been that of taxing in accordance with ability to pay. This principle was discussed briefly in Chapter 15. This principle or criterion has been widely accepted by the public and by policy makers in the United States and other Western democracies. One of the attractive features of this principle, from a political point of view, is its very ambiguity. It is almost impossible to define ability to pay in any meaningful and objective fashion. A few characteristic features of the tax structure do, however, seem to correspond to popular ideas about ability to pay. The first of these is the obvious one that the tax liability of any individual should vary directly with his income, that is to say, income is one suitable measure of taxpaying ability. But a proportional or even a regressive tax structure would also meet this first test. But ability to pay, as ordinarily understood, requires something more than this. The ability of an individual to pay taxes supposedly increases more than in proportion to his increase in income. Therefore, tax progression has come to be considered by a majority of the people as a desirable part of a fiscal system. This progression is explained or justified as being required by the application of the ability-to-pay principle.

Until the last generation, isolated attempts were variously made to give meaning to the conception of ability to pay by connecting the tax rate structure with individual enjoyment of income. The utilitarian approach involved the assumption that the utility of income could be measured and compared among persons. Since the marginal utility of income presumably declines as more income is received, the principle of minimizing the sacrifice of utility for all persons taken together was held to require progressive tax rates. During recent years, this approach has been all but wholly abandoned. It is now widely accepted that utility cannot be measured, and that, even if it could, the utility of income to one individual could hardly be compared with the utility of income to a different individual.

Few students of the taxation problem, and almost no public supporters of progressive income taxation, have stated openly that the real aim of the progression in the rate structure is to insure that some desired redistribution of income among individuals is achieved as a corollary purpose of the fiscal process. As suggested earlier in Chapter 14, redistribution of income among persons is not often explicitly adopted as a deliberate goal for fiscal organization; the redistribution achieved is accomplished indirectly rather than directly. But the progressive income tax is the primary means of achieving redistribution in the modern fiscal system. The degree of progression in rates should be determined largely by the desires of the people to accomplish some deliberate redistribution. This provides a more meaningful approach than a continued reliance on the rather unsatisfactory ability-to-pay principle.

CONCLUSION

Before discussing the actual institutions of the personal income tax, it is useful to consider some of the conceptual problems involved in income taxation. The first of these is the appropriate definition of income itself for tax purposes. There are two basic conceptions or definitions of income, and these may differ quite sharply when applied to the determination of individual income for computing the appropriate tax base. The flow conception does not include as income accretions to capital values, whereas the accrual conception does count such accretions as income. A second group of major problems arises when the attempt is made to measure income. Money incomes are relatively easy to measure, but real income received in a nonmonetary way presents difficult problems.

Personal income taxes are rarely levied on the basis of income alone. Nonincome considerations introduce several other bases for discriminating among individuals. One of the most important of these is discrimination based on the size of income itself. Modern tax structures involve progressive rate structures, as distinct from proportional or regressive rate structures.

The progression in modern tax systems is based on the acceptance by the public of the principle of ability to pay. This principle has little meaning. Actually, the degree of income tax progression must be decided on the basis of the desire of the social group to redistribute incomes among individuals in the society.

SUPPLEMENTARY READING

The student interested in a more advanced discussion of the problems raised in this chapter is advised to read Henry Simons' "classic" on income taxation, *Personal Income Taxation* (Chicago: University of Chicago Press, 1937).

Chapter 22

PERSONAL INCOME TAXATION IN THE UNITED STATES

The personal income tax is the most important source of revenue for the federal government. In the 1961 fiscal year, this tax will produce an estimated $43.7 billion, or approximately 52 per cent of total federal tax revenues.

This tax has come into prominence as a major federal revenue source during the last half century. Only after the adoption of the Sixteenth Amendment to the United States Constitution in 1913 did this tax assume full legal status. An income tax was imposed and legally upheld during the Civil War, but a later 1894 tax was declared unconstitutional on the grounds that discrimination among persons in accordance with income violated the constitutional requirement that all direct taxes be uniformly distributed among the states in proportion to population. The Sixteenth Amendment specifically gives Congress the power to levy taxes on incomes without regard to the distribution of the population among the separate states. Since 1913 the personal income tax has undergone many changes in details of coverage and in administrative characteristics. Some of these will be discussed at the appropriate points, but, broadly speaking, the basic features of the tax have remained substantially unchanged over the half century of development.

There is little likelihood that this major revenue source will diminish in relative importance in future years. As the public sector of the economy grows, problems encountered in increasing income tax rates will become more acute, and some shift toward alternative federal revenue sources may take place. But if the economy also grows, the public sector may be expanded without tax rates being increased significantly. In any case, the personal income tax seems certain to remain as the most significant federal revenue source for many years.

DEFINITION OF THE TAX BASE

The word "personal" suggests that the tax is levied on persons or individuals. Currently (1960), each individual or family unit that receives an income of $600 or more during a calendar year must file a tax return.[1] This provision means that a very large percentage of American adults are included in the coverage of the tax. The tax is the most universal of all those in the fiscal system. In 1957, almost 60 million individual income tax returns were filed with the Bureau of Internal Revenue.

The base of the tax is the income received by the individual or family unit. But, as Chapter 21 discussed, many issues of definition may be raised. Almost any personal income tax system must include some quite arbitrary definition of income. The United States tax system is no exception to the rule. However, little difficulty arises in defining the major sources of income to be included in the tax base. All money wages, salaries, bonuses, commissions, interest, dividends, rents, royalties, and other like payments are taxable as personal income. Rather few items of income are specifically exempted from the tax. These include such things as interest on state and local government securities, social security benefits, veterans' benefits, and similar payments which, quantitatively, do not add up to a large fraction of total income received.

The important definitional and measurement problems arise in connection with those receipts that do not constitute ordinary income but which yet retain certain characteristics of personal income. One of the most important of these is the receipt of income in kind from the employer. If the individual receives income in kind as a part of his wage or salary, this is taxable just as money income receipts. But if the income in kind is received as a part of the employment itself, it is not taxable. The importance of this distinction has only recently become evident. It is, of course, extremely difficult to separate those items of income in kind that constitute genuine payments of income to the employee from those that are in connection with the employment itself. If, for example, a salesman is provided with a suite of rooms in a New York hotel during the time he is calling on city clients, the value of this suite is not taxable as income to the employee. But his real income, considered in any meaningful way, may be substantially increased by the opportunity to enjoy the benefits of the suite during his New York trip. Or the executive may take

[1]Except for persons 65 years of age and over, in which case the appropriate figure is $1,200.

a winter trip to Florida to see Miami business associates. Should or should not the expenses of the Florida trip be included as a part of his taxable income? It is clear from these simple examples, which could be multiplied, that many decisions of importance must be made by the tax administrators. If rules are to be laid down in advance, these rules themselves must be quite arbitrary. The complexity of such problems increases, of course, with the increasing structure of income tax rates.

A problem of a slightly different sort arises in the treatment of capital gains. As suggested in the preceding chapter, rigid adherence to the flow concept of income would exempt capital gains from income taxation, whereas full acceptance of the accretion conception would take full account of both capital gains and capital losses in measuring individual income for tax purposes. The tax, as administered in the United States, is not fully consistent with either definition of income. Capital gains, to the extent that they are realized during the lifetime of the individual, are taxable, but they are granted differentially favored treatment. Gains from the sale of assets held less than six months are defined as "short-term gains" and are fully taxable as income to the individual. Gains from the sale of assets held more than six months are defined as "long-term gains." Only half of long-term gains are included in the base as taxable income. If the taxpayer is in a relatively high income bracket, the treatment of capital gains becomes even more favorable since a ceiling of 25 per cent is placed on the amount of the capital gains that shall be paid in tax. Special provisions apply to gains from the sale of owner-occupied homes. If the individual uses the proceeds of the sale toward the purchase of another home, there is no (current) tax liability.

There is not a fully symmetrical treatment of capital losses. Capital losses, short or long term, are deductible from the tax base only to the extent that they offset capital gains plus $1,000. If a capital loss is not fully offset in this way, there is a possibility of carrying losses over to subsequent years and offsetting them against capital gains and the $1,000 limit in any of the succeeding five years.

EXEMPTIONS AND DEDUCTIONS

Adjusted gross income, computed after the foregoing measurement procedures are carried out, is not the actual base for determining the tax liability of an individual. To arrive at taxable income from adjusted gross income, personal exemptions and deductions must be taken into account.

At the present time (1960), each person is allowed a personal exemption of $600 for himself and for each of his allowable dependents. A dependent defined for tax purposes is anyone who receives less than $600 in independent income and who receives more than half of his financial support from the taxpayer. For children under 19 years of age and for children who are students, the requirement that they must earn less than $600 independently is waived. Thus, for example, a college student can earn $1,000 on his own and still be counted as a dependent by his father so long as his father pays more than half of his total financial support. As contrasted with the practice before World War II, no differential in the personal exemption between adults and children is present. The taxpayer with two adult dependents will receive the same $1,200 personal exemption that the individual taxpayer with two infants receives.

A more important adjustment, in a quantitative sense, is that made for allowable deductions. Allowable deductions are of two kinds. The taxpayer may take what is called the "optional standard deduction" or he may choose to itemize his deductions. For persons earning less than $5,000 per year, the tax computation normally allows for an automatic standard deduction. For taxpayers earning more than this amount, they must choose between the two ways in which they are allowed to report their taxable income. The optional standard deduction amounts to 10 per cent of adjusted gross income or to $1,000 as a maximum. In other words, the maximum deduction allowed is $1,000. For example, a taxpayer with a gross income of $8,000 may take a maximum of $800 optional standard deduction whereas a taxpayer with an income of $15,000 may take a maximum of only $1,000. The optional standard deduction is allowed without any computation on the part of the taxpayer. He need not account for any part of the deduction.

On the other hand, if he chooses to itemize his deductions, he must carefully estimate and compute the various allowable items. It is in the items which should or should not be allowed as deductions that much of the controversy and discussion about the personal income tax law is to be found. It will perhaps be worthwhile to discuss each category of allowable deductions separately.

Contributions

The taxpayer is allowed to deduct from his gross income contributions that he makes to various religious, charitable, educational,

scientific, or literary organizations before arriving at his taxable income. The allowance for contributions can amount to as much as 30 per cent of gross income in certain cases, and to 20 per cent in all cases. To qualify for this deduction, the contributions must be made to nonprofit institutions that meet certain rather loosely drawn requirements. Restrictions are placed on institutions presumably serving a propaganda rather than an educational function, and contributions to political parties are not deductible.

There is little basis, in principle, for the allowance of deductions for contributions. The existence of this allowance can best be considered as a means through which the social group subsidizes the financing of the institutions to which contributions are allowed as deductions. It is clear that religious and educational institutions are more adequately financed because of this allowable deduction. If, for example, no allowance were permitted, the individual contributor to his church would be forced to compare the full cost of his contribution against the benefits that he presumably receives. With the allowable deduction, he must compare only the marginal income retained after taxation with his benefits. The remainder of the cost is shifted to the whole set of federal taxpayers.

Interest

The taxpayer is allowed to deduct from his gross income all interest that he pays on personal debts. For example, if the individual owns a home that is mortgaged, he may deduct that part of his payments which represents interest. In fact, the data available indicate that the deduction of mortgage interest is the most important single use of this deduction. But interest payments on funds borrowed for almost any purpose are also deductible from gross income before arriving at taxable income.

The interest deduction may be used to illustrate in a more practical manner the issues of definition and measurement raised in Chapter 21. We may introduce a simple example. Suppose that an individual borrows $1,000 at an interest rate of 5 per cent. His interest payments will amount, therefore, to $50 per year. He may do any one of several things with this borrowed capital. First, let us say that he may invest it and earn a 5 per cent return, or $50 per year. If he earns just as much as it costs him to finance the interest charges, it is evident that his net worth is not modified. Therefore, if the accretion or accrual definition of income is adopted, he should not be

subjected to a tax liability. Hence, he should be allowed to deduct the interest charges from the income receipts of $50 in computing his tax liability. But now let us suppose that the same individual spends the $1,000 in purchasing a hi-fi set. Presumably, at the time of the combined borrowing-purchase operation, he must consider that the hi-fi set will yield a return in real income at least equal to the 5 per cent interest charge. In terms of tax liability, if the interest charge is allowed as a deduction but no income from the hi-fi set is imputed as a part of the tax base, this individual is differentially favored over the one who borrows to invest in a money return. On the other hand, if the interest charge is not allowed as a deduction, the individual in the first instance who receives a money return is taxed on income even though his net worth is not modified.

Taxes

One of the most important of the specific deductions allowed in the computation of personal income tax liability is that of state and local taxes paid. The taxpayer may deduct from gross income the amount of taxes that he has paid for the general-purpose operation of state and local governmental bodies. He may deduct such tax payments as state income and property taxes, local property taxes, state excise taxes, and automobile license fees. The only taxes levied by state and local government and not specifically deductible are those which relate the tax payment quite closely to the benefits received, such as local assessments for the improvements of city streets. Federal taxes are not deductible.

The amount of the total deductions under this provision is significant. Between 3 and 4 per cent of adjusted gross income is deductible as taxes paid to state and local governments. Although this deduction has been present since the beginning of the income tax, there is little logical reason for its continuation. In a real sense, taxes paid to state and local governments are "prices" paid by the individual for the purchase of those public services provided by these units of government. Viewed in this light, these taxes should not be deductible any more than ordinary expenditures for privately produced goods and services. The deductibility feature of state taxes, however, serves to reduce the effective rate of the state levies on local taxpayers, and allows the states to shift at least some burden of the financing of state and local expenditures onto the shoulders of the general federal taxpayer.

Medical Expenses

The individual taxpayer is allowed a deduction for medical expenses if these exceed 3 per cent of his adjusted gross income. Maximum limits are imposed on the total amount of this deduction allowed. This represents a recognition that income, as measured, does not, in certain cases, represent a satisfactory criterion for determining tax liability. The individual family, faced with heavy medical and hospital charges, is deemed less able to pay taxes than the family with a similar income but not burdened with the charges. This decision to allow a medical expense exemption must be considered to be arbitrary, but understandable. Its quantitative importance has been recently increasing with the rapidly rising costs of medical treatment and hospital care.

Miscellaneous Deductions

Certain other miscellaneous deductions are allowed the individual taxpayer before computing his taxable income. These deductions usually take the form of those expenditures made in connection with his profession or employment. For example, union dues, fees to employment agencies, and the cost of certain tools and supplies used in working are deductible under this item.

Summary

No attempt has been made here to catalog in detail the various deductions that are allowed in the current administration of the personal income tax in the United States. This has not been necessary or desirable for the purposes of this chapter. In the first place, detailed provisions of the allowable deductions under each of the major categories is constantly changing. Only a careful and current perusal of the tax administration regulations can suffice to provide currently relevant information relating to the structure of allowable deductions. This discussion has been aimed, instead, at providing a general survey of the major categories of deductions which are currently (1960) allowed under the income tax, and which seem likely to remain as major categories for some time.

RATE STRUCTURE

After having first estimated his adjusted gross income, the individual taxpayer must choose either to itemize his deductions or

to elect the optional standard deduction. After these deductions are taken from adjusted gross income, an estimate of taxable income is produced. This is the criterion of tax liability for the individual taxpayer. It is to this that the rate structure is applied in determining the amount of total federal income tax that the individual must pay during any particular calendar year.

The computation procedure for the individual taxpayer who earns less than $5,000 adjusted gross income and who does not find it advantageous to itemize deductions is quite simple. He need not compute the optional standard deduction at all since this is accounted for in the tax table which he is allowed to use in determining his tax liability. The tax return may take the form of a small card that he sends in to the appropriate office of the Bureau of Internal Revenue. The tax table allows the individual to take his income and his exemptions and to figure his tax bill without difficulty.

Before discussing the rate structure of the income tax further it is essential to clarify the two terms *average rate of tax* and *marginal rate of tax*. The average rate is computed by dividing the tax bill or tax liability by the tax base, either adjusted gross income or taxable income. As suggested earlier, the characteristic feature of the progressive rate structure is the excess of the marginal rate of tax over the average rate. The marginal rate is computed by dividing *the change* in tax liability by *the change* in the tax base. With specific reference to the tax table applying only to incomes below $5,000, the maximum marginal rate of tax is 20 per cent. For example, the single individual with no dependents who earns $4,950 must pay $803 in federal income tax. The same individual, if he earns $5,000, must pay $813 in tax (at 1960 rates). The ratio between the added tax liability ($10) and the additional income ($50) is one fifth or 20 per cent. This is the nominal marginal rate of tax. The average rate, on the other hand, is only $813 divided by $5,000 or approximately 16 per cent. Only in a purely proportional rate structure without allowable exemptions or deductions would the average rate of tax be equal to the marginal rate.

Individuals with adjusted gross incomes over $5,000 per year, or individuals who choose to itemize deductions even if their income is below this figure, must use a somewhat more involved method of calculating their tax liability. They must first compute their taxable income after taking account of the allowable exemptions and deductions. Then they compute their own tax liability from the tax schedules as given. One such schedule is reproduced as Table 22–1. This

is the 1959 schedule, applicable to 1958 income, for a single taxpayer. Separate schedules are provided for married taxpayers who choose to file a joint return and for taxpayers qualifying as heads of households, as legally defined. It is easy to note from the schedule reproduced here that the initial marginal rate of tax is 20 per cent. This marginal rate rises rapidly as income rises, and it reaches a maximum of 91 per cent in the highest brackets.

TABLE 22–1

Rate Schedule for 1958 Tax Return

Schedule I. (A) SINGLE TAXPAYERS who do not qualify for rates in Schedules II and III, and (B) married persons filing separate returns

If Taxable Income is:			
Not over $2,000		Total Tax	20% of the amount of Taxable Income
Over	But not over		of excess over
$ 2,000	$ 4,000	$ 400, plus 22%	$ 2,000
4,000	6,000	840, plus 26%	4,000
6,000	8,000	1,360, plus 30%	6,000
8,000	10,000	1,960, plus 34%	8,000
10,000	12,000	2,640, plus 38%	10,000
12,000	14,000	3,400, plus 43%	12,000
14,000	16,000	4,260, plus 47%	14,000
16,000	18,000	5,200, plus 50%	16,000
18,000	20,000	6,200, plus 53%	18,000
20,000	22,000	7,260, plus 56%	20,000
22,000	26,000	8,380, plus 59%	22,000
26,000	32,000	10,740, plus 62%	26,000
32,000	38,000	14,460, plus 65%	32,000
38,000	44,000	18,360, plus 69%	38,000
44,000	50,000	22,500, plus 72%	44,000
50,000	60,000	26,820, plus 75%	50,000
60,000	70,000	34,320, plus 78%	60,000
70,000	80,000	42,120, plus 81%	70,000
80,000	90,000	50,220, plus 84%	80,000
90,000	100,000	58,620, plus 87%	90,000
100,000	150,000	67,320, plus 89%	100,000
150,000	200,000	111,820, plus 90%	150,000
200,000		156,820, plus 91%	200,000

It is important to note that the marginal rates of tax shown for various income levels in Table 22–1 apply only to taxable income. For example, if the individual taxpayer had between $32,000 and $38,000 in taxable income in the year 1958, the marginal rate of tax on this taxable income was 65 per cent. Out of each additional dollar of taxable income, 65 cents tax liability was incurred; only 35 cents was retained as income after taxes.

The marginal rate of tax on adjusted gross income need not be nearly so high as that on taxable income. Exemptions and deductions intervene between these two income computations, and it is possible that the taxpayer may receive additional income without incurring the full marginal tax liability if he can convert a portion of this income into an allowable deduction. For example, suppose that the taxpayer receives a salary increase from $32,000 to $33,000. With the added $1,000 let us suppose that he contributes $500 to his university, and that he has not exhausted the full extent of his allowable contributions deduction. In this way, only half of his added income becomes taxable income. On this he must pay a marginal tax rate of 65 per cent, but the marginal rate on adjusted gross income becomes only half as large, or 32.5 per cent. In effect, by making this contribution to his university the taxpayer in our example is shifting some additional part of the cost of higher education to the general federal government taxpayer. The incentive for the individual to convert gross income into deductions becomes increasingly important as the marginal rate of tax increases. Aside from contributions and taxes, the importance of exemptions and deductions in reducing the marginal tax rate on adjusted gross income is rather unimportant at the higher income levels. This is because of the dollar ceiling put on medical expenses, the equal dollar amount of the personal exemptions, and the low probability that the higher-income taxpayers will have large interest obligations on borrowed funds.

However, a very important means remains by which the higher-income taxpayer may reduce the over-all tax liability. He may, through various means, convert what would have been ordinary income into capital gains. In this way, he may reduce the marginal tax rate from a maximum of 91 per cent to a maximum of 25 per cent. This step may be taken through investment in corporations which choose to retain earnings rather than to pay them out as dividends. For example, if the taxpayer invests his funds in a growing enterprise that reinvests its earnings, the capital value of his equity shareholdings will increase. If the taxpayer chooses to convert some of this increased value into current purchasing power, he may sell off sufficient portions of his stock. But the increment in capital value will be taxable only at the maximum of 25 per cent under the special treatment accorded to long-term capital gains under the tax law. This provision encourages corporate retention of earnings, and probably does enhance the rate of economic growth in the economy. Were it not for this provision, and the other means of avoiding the high marginal rates of tax, the tax burden on the higher-bracket incomes

would scarcely prove acceptable. There is now rather widespread recognition by students of taxation that some adjustment should be made in the nominal rate structure through a thoroughgoing reduction in upper-bracket rates. As per capita income rises in the United States, there seems to be increasing recognition that the redistributive impact of the higher-bracket rates has been overemphasized, and that the effects on economic growth have been underemphasized. This shift in values has been accompanied by a widespread acceptance of the idea that the highest level rates are largely illusory since few taxpayers fail to take advantage of the capital gains loophole to some extent. Various proposals have been made to place a ceiling on the marginal rate of tax, and it seems quite possible that such a step will be taken within the next decade.

Average tax rates on either taxable income or adjusted gross income are, of course, considerably lower than marginal tax rates. Considering taxable income alone, a schedule of average tax rates, computed from Table 22–1, is shown in Table 22–2.

TABLE 22-2

Schedule of Average Rates of Tax on Taxable Income for 1958 Returns for Single Taxpayer Computed from Schedule I (A)

Taxable Income	*Average Rate of Tax, Per Cent*
Under $2,000	20
$ 2,000 to $ 4,000	20 –21
4,000 to 6,000	21 –22.7
6,000 to 8,000	22.7–24.5
8,000 to 10,000	24.5–26.4
10,000 to 12,000	26.4–28.3
12,000 to 14,000	28.3–30.4
14,000 to 16,000	30.4–32.5
16,000 to 18,000	32.5–34.4
18,000 to 20,000	34.4–36.0
20,000 to 22,000	36.0–38.0
22,000 to 26,000	38.0–41.0
26,000 to 32,000	41.0–45.0
32,000 to 38,000	45.0–48.3
38,000 to 44,000	48.3–51.0
44,000 to 50,000	51.0–53.6
50,000 to 60,000	53.6–57.2
60,000 to 70,000	57.2–60.1
70,000 to 80,000	60.1–62.8
80,000 to 90,000	62.8–65.1
90,000 to 100,000	65.1–67.3
100,000 to 150,000	67.3–74.5
150,000 to 200,000	74.5–78.4
200,000 to	78.4

As suggested, the average rates of tax on adjusted gross income are considerably lower than the average rates shown in Table 22–2, which are rates calculated for taxable income. The total of exemptions and deductions is sufficiently large to make a substantial difference in the level of average rates of tax. For example, for the year 1957 the total of adjusted gross income was $279 billion, on which a total tax of almost $34 billion was paid. The average tax rate for the whole set of taxpayers was, therefore, only slightly more than 12 per cent. This average rate of tax on adjusted gross income for the whole taxpayer group is partially explained by the fact that some $20 billion of adjusted gross income which was reported on individual tax returns was not subjected to any tax. The average rate on all adjusted gross income on *taxable* returns amounted to more than 13 per cent.

A rough estimate of the relationship between the average rate of tax on adjusted gross income and the average rate of tax on taxable income may be made by comparing Table 22–2 with Table 22–3. Table 22–3 shows the adjusted gross income, by income groups, the income tax paid, by groups, and the percentage of income paid. Note, for example, that, in the $5,000 to $10,000 income group a total of $117.5 billion was reported as adjusted gross income for 1957. A total tax of $13 billion was paid by this group. The average rate of tax was thus 11 per cent for this group. The discrepancy between this rate and the rate of 20 to 25 per cent on taxable incomes falling within this same range is explained by the fact that exemptions and deductions reduce the taxable income within this bracket to very low amounts, and, in many cases, eliminate the tax liability altogether. For example, an individual earning $5,000 in adjusted gross income who has three dependents and who merely takes the optional standard deduction has a taxable income of only $1,900 ($5,000 − $2,400 exemptions − $500 optional standard deduction). This will be subjected to the 20 per cent rate, and a total tax liability of $380 will result. But $380 is only 7.6 per cent of adjusted gross income.

Table 22–3 is also helpful in indicating the potential yield of further increases in the personal income tax. It can be noted that the concentration of income before taxes in the middle- and low-income ranges. In 1957, only some $22 billion out of the total adjusted gross income of $279 billion was received by taxpayers reporting more than $25,000. This suggests that any substantial increase in the utilization of the personal or individual income tax as a source of federal government revenues must, to a large extent, subject the middle- and

low-income ranges to significantly higher average rates. Little additional revenue can be secured through any increase in the progressiveness of the federal revenue structure.

TABLE 22-3

Individual Income Tax Returns for 1957

Adjusted Gross Income Classes	*Total Number of Returns*	*Adjusted Gross Income (In millions)*	*Income Tax (In millions)*	*Average Rate, Per Cent*
Grand total	59,817,158	$279,231	$33,936	12
Taxable returns	46,466,378	259,765	33,936	13
Under $5,000	25,598,024	79,126	7,062	9
$ 5,000–$10,000	17,422,023	117,526	13,074	11
10,000– 25,000	2,978,440	40,610	6,550	14
25,000– 50,000	365,000	12,196	3,108	25
Over $50,000	111,706	10,307	4,143	40

Source: News Release of December 26, 1958, Internal Revenue Service, United States Treasury Department. Advance tabulations for later publication in *Statistics of Income—1957*.

INCOME TAX RATES AND INFLATION

Since inflation is recognized to be a major danger in the modern institutional setting, it will be useful to discuss briefly how this inflationary process affects the rate structure of the personal income tax. The rates of tax must, for practical reasons, be based on money incomes of individuals. In any general inflationary process, money incomes of individuals increase along with price of final products. If the rate of tax were proportional, that is, if it were constant over all incomes, the inflation would produce additional revenues in proportion to the general rate of increase in average income. With a progressive rate structure, however, the proportionality effect is not present. As money incomes rise, the revenue produced by the unchanging income tax rates produce proportionately more revenues than would be indicated by the rate of price increases.

This may be readily illustrated by a simple example. Suppose that an individual has a taxable income of $2,500 in a year before inflation takes place. At current (1960) rates, he will pay the first bracket rate of 20 per cent on the first $2,000, and the next bracket rate of 22 per cent on the added $500, making a total tax liability of $510. Now let us suppose that general inflation takes place which causes all prices and incomes to double. The individual will now receive a taxable money income of $5,000 although his real income

will not have changed at all. If the rate structure of the tax is constant, he will now pay a tax of 20 per cent on the first $2,000 ($400) plus a tax rate of 22 per cent on the next $2,000 ($440) plus a tax rate of 26 per cent on the last $1,000 of taxable income ($260). His total tax liability will be $1,100. Thus, his total tax will be more than double that previously paid. The real value of his tax burden will be increased due to the inflation.

Inflation will, in this way, tend to increase the real rate of tax even though nominal rates remain unchanged. If the government desires to maintain a constant real rate structure during an inflationary process, it will find it necessary to reduce nominal rates of tax on money incomes. In addition to this effect of increasing the real rate of tax at all levels of income, inflation will also increase the real progressiveness of the rate structure. Inflation with an unchanged nominal rate structure will increase the real rate of tax proportionately more for the higher-income levels than for the lower-income levels. For example, a doubling of all prices and incomes along with maintenance of present (1960) nominal rates of tax, would increase by only 5 per cent the real tax burden of the single individual who moves from the $2,000 to the $4,000 money income level. But the single individual who moves from the $10,000 to the $20,000 taxable income level will find his real tax burden increased by about 27 per cent as a result of the inflation alone.

COLLECTION AND ENFORCEMENT

Approximately two thirds of the total revenues collected under the federal personal income tax is collected by the employer withholding tax payments from wage or salary payments to individuals. The employer acts as the collector for the federal government in this case. The funds withheld are forwarded directly to the Internal Revenue office. The taxpayer never has possession of the major part of his income paid in taxes. The tax upon his income is collected from the individual before the income is ever received. At the end of each year, the taxpayer receives from his employer a piece of paper, a copy of which is forwarded to Internal Revenue, indicating the amount of total taxes withheld during the year. This is used by the taxpayer in computing his net tax liability on or before April 15 of each year. If his employer has previously withheld less than the computed tax liability, the taxpayer must supplement the previously withheld total by an additional tax payment. If his employer has withheld more than the computed tax liability, the taxpayer may claim a refund.

The amount of withholding by any single employer will be calculated on the basis of information received from the taxpayer concerning the number of his personal exemptions. This, as modified by some assumed computation of deductions, will determine the rate at which the employer will withhold tax from wages and salaries. If the information provided the employer and the size of allowable deductions are approximately accurate, the taxpayer should, on the average, neither receive a refund nor be required to pay a supplemental tax, provided that he has received all his income as wages or salaries subject to withholding, and provided that he is in the low- or middle-income ranges.

If the individual taxpayer receives more than $100 in income that is not subject to withholding or if his income exceeds $5,000, if single, and $10,000 if married, the individual must file a Declaration of Estimated Tax along with his claim for a tax refund or his payment of a supplemental tax on April 15. This Declaration of Estimated Tax is an estimation of income for the year in progress at the time, and the individual taxpayer must pay this estimated tax in quarterly payments to the Internal Revenue Office. The purpose of this requirement is to enable the taxpayer who is not fully covered by withholding to pay his total tax bill in installments rather than in one lump sum. If he computes his estimated tax properly, and pays the quarterly payments as provided, when his final return is filed he should not be subjected to supplemental taxes of more than small amounts.

The withholding method of tax collection, which was introduced into the United States income tax during World War II, has an apparent advantage if the tax is viewed from the point of view of the individual taxpayer. The psychological burden of tax payment is greatly reduced if the individual does not ever have full possession of the revenue. His whole private budgetary calculus may be worked out on an income-after-tax basis, and he will not be subjected to serious pressure to reduce private spendings or savings at any particular time during the year. The withholding feature, along with the requirement of quarterly payments on income tax not withheld, does possess the virtue of being considerably more convenient.

The withholding of taxes has a major disadvantage, however, when the broader problems of fiscal decision making are introduced. The failure of the individual taxpayer to have income destined for tax payments in his possession tends to make him relatively indifferent as to the level of taxes levied, and, in this way, tends to make him support public expenditure measures that are perhaps not really

worth the sacrifice involved in the tax payments. In the private economy, individual purchases are, by necessity, made out of income that the individual clearly has in his possession and which could be directed to alternate uses. It seems clear that considerations of comparative evaluation would dictate that the individual should be forced to undergo a similar psychological reaction in purchasing public goods and private goods.

Although tempered considerably in the case of taxes withheld from wages and salaries, an essential characteristic of the federal income tax is the location of the primary responsibility for computing tax liability on the individual taxpayer himself. The individual is responsible for (1) making a tax return if he earns more than $600, (2) for measuring his income properly, (3) for taking exemptions and deductions in accordance with stipulated regulations, (4) for computing his own tax liability, and (5) for making final adjustments in the tax payments. The administrators of the income tax presume that the individual will, in fact, carry out these separate stages of the income tax process. Each taxpayer is provided with a return to be filled out, and he is given detailed instructions as to the rules to be followed in filing the return. But the responsibility for filing a correct return rests on the individual.

If the individual fails to file a return when he should do so, if he files a return but does not report all income received, if he reports all income received but takes more exemptions and deductions than is allowed, or if he computes his tax improperly, he is subject to penalties and to criminal prosecution if the intent is shown to be fraudulent. The task of the Internal Revenue Bureau in trying to insure adequate enforcement of the tax is, of course, immense. Limited staff prevents the careful audit of each and every income tax return. For smaller incomes, a random sampling process is used to determine which returns shall be audited carefully. Each return is mechanically checked for purely arithmetical errors.

The more difficult problems of enforcement arise in the uncovering of deliberate attempts to avoid payment of taxes. Certain premiums are granted to informers who report delinquents, but there is no systematic means of policing the tax effectively. This is a problem inherent in the personal income tax that places the primary responsibility on the individual taxpayer, as in the United States or British tax systems. The effective administration of such a tax depends on the existence of a rather high degree of taxpayer morality. The tax

works well only if the number of persons who deliberately seek to disobey the law remains relatively small. Such a high degree of morality has characterized both the American and the British taxpayer in the past. But it seems clear that the full effects of the continued high postwar rate structure have not yet been determined. There seems to be considerable danger that the continued high rates of tax will lead to an increasing amount of fiscal fraud. The existence of such fraud is now widely recognized, especially in those professions and occupations where income is not subjected to withholding. It is almost impossible, of course, for the wage or salary worker to avoid payment of his proper share of taxes. It becomes relatively easy for the individual who receives his income directly from the sale of services or products, especially if he can receive it in cash, to avoid at least a certain share of his proper tax.

If the problem of fraud should get more serious, which seems highly probable, the administration of the personal income tax may be modified in the direction of removing the primary responsibility from the individual taxpayer and placing it on the tax authority. The French and the Italian taxes become the characteristic form of this sort of income tax administration. It comes to be widely accepted under such conditions that the individual taxpayer is under no moral obligation to pay more in taxes than he must pay. The tax authority must try, in such conditions, to set up certain rather arbitrary, but objectively measurable, rules for determining the legal tax liability of the individual. The manner in which the individual spends his income usually becomes one criterion for determining tax liability in such circumstances. This sort of tax administration is much less productive of revenue than the American and British systems, and also much more restrictive of individual freedoms. But the necessity of shifting American tax administration in this direction must be faced if the continued high rates of income tax should cause a widespread and serious breakdown in taxpayer morality in the United States.

CONCLUSIONS

The personal or individual income tax provides more than half of the total revenues of the federal government. The importance of this revenue source does not seem likely to diminish over the foreseeable future. The full effects of the probable continuation of the high level of rates in the period after World War II have not yet been determined, and the tax itself is only a half century old.

The tax is levied on persons as heads of family units or as individuals. Certain problems arise in defining income, but, by and large, all ordinary income from the sale of personal or resource services is included in the tax base. The total amount of income received measures adjusted gross income. The taxpayer is allowed to deduct from this certain allowances for personal exemptions and deductions. This step completed, taxable income is given, and it is on this that the actual tax liability is computed.

The rate structure is highly progressive. The lowest-bracket rate on marginal taxable income is 20 per cent at the time of this writing (1960), but this increases as taxable income increases to a high of 91 per cent in the highest-income ranges. It is necessary, however, to distinguish carefully between the marginal rate of tax and the average rate on taxable income and the rates on adjusted gross income. Exemptions and deductions allow the taxpayer to reduce his taxable income to a figure considerably below adjusted gross income in many cases, correspondingly reducing his average rate of tax on the latter.

There is a very important additional means through which the taxpayer may reduce his over-all liability. He may, in certain cases, convert ordinary income into capital gains through various institutional devices. This conversion has the effect of reducing the average rate of tax to a maximum of 25 per cent on this income. This capital gains loophole is of major significance for the higher-income groups, and it does allow individual taxpayers in these groups to escape the unreasonably high marginal rates on upper-bracket incomes. The existence of this possibility also makes it advantageous for corporations to retain earnings rather than to pay them out as dividends, a policy which probably serves to enhance somewhat the rate of economic growth.

The United States personal income tax is collected from the individual, and the individual retains the primary responsibility for filing the tax return correctly. However, in the postwar years, more than two thirds of the tax is collected from employers who withhold estimated amounts of taxes from the wage and salary payments made to employees. This system has a certain convenience for the individual taxpayer as well as for the tax administrators, but its long-run effects on the consciousness of the taxpayer seem to be of questionable value.

The level of taxpayer morality has, in the past, remained relatively high in the United States. The continuation of the high rates into the future may, however, undermine this morality. As this takes

place, some shifting of tax administration in the direction of establishing more objectively determinate measures of individual taxpayer liability may prove necessary.

This chapter has discussed the major features of the personal income tax as it exists in the United States. It should be recognized that the complex institution represented by the tax is subjected to constant modification and change. This fact makes it undesirable to discuss detailed characteristics of the tax in a textbook of this nature. Few of the more basic features discussed in this chapter seem likely to be modified drastically within the foreseeable future, although details of each may be changed. For example, the personal exemption of $600 currently in force may well be moved upward or downward, but the personal exemption as a part of the tax structure itself seems certain to be retained. Similarly, the percentage maximum allowed as a deduction for contributions or for medical payments may be changed from year to year, but the continuation of some allowance for these and other deductions seems to represent a quasi-permanent feature of the tax. And, perhaps more importantly, the rate structure itself is subject to change at each rewriting of the tax law, but the fundamental progressiveness in this structure seems to represent an essential characteristic. Predicted changes in this rate structure may take the form of some reduction in upper-bracket rates to reflect more realistic progressiveness, and some possible year-to-year changes in the first-bracket rate as perhaps the most desirable practicable means of shifting the over-all economic impact of the income tax.

SUPPLEMENTARY READING

The student is advised to secure and to read the current versions of the *Instructions* on preparing the personal income tax return. These instructions are issued each year by the Bureau of Internal Revenue, and from the information contained the student can obtain up-to-date information on the details of income definition and measurement, personal exemptions, deductions, tax computation, and rates.

If the student has an interest in locating answers to more particular and detailed questions concerning the administration of the income tax, he should consult either the Internal Revenue Code, or if he desires something even more specific, one of the Tax Services which may be found in almost every library. These provide a discussion of recent administrative and court rulings on details of tax administration.

Chapter 23 PERSONAL INCOME TAXATION: ECONOMIC EFFECTS

For a long time now, outstanding scholars in public finance have believed that the personal income tax provides the most suitable means of raising revenues for general-purpose public expenditures. It is, therefore, not surprising to find that this tax occupies such an important position in the fiscal systems of Western countries. The alleged superiority of the personal income tax over other revenue-raising devices arises out of a comparison of economic effects, along with other considerations of equity. In order to understand why students of fiscal systems have given such wholehearted support to personal income taxation, it is necessary to analyze the economic effects of the tax carefully.

THE NOTION OF A GENERAL TAX

One of the long-accepted criteria for taxation states that, where possible, the tax should be *general* rather than specific. By a general tax is meant one that applies *generally*, that does not impose a differential burden on any particular individual or group. Among the set of potentially practicable taxes that yield sizable revenue, the personal income tax best meets this criterion.

Several subsidiary advantages are implied by the idea of generality. First of all, a tax that is completely general cannot exert any economic effects. If a tax applies to every individual in all circumstances, there is no way in which an individual can change his behavior with the purpose of escaping all or a portion of his tax liability. As a matter of fact, the absence of such changes in behavior as a result of the tax is the best way of determining whether or not a given tax is *general*. In other terms, a general tax cannot be *shifted* since the only way in which individuals can shift a tax is through

some modification of their own behavior. By contrast, a specific tax or a nongeneral tax may be shifted. For example, a tax on the sale of beer is actually paid by the selling firm. But the firm may shift the tax to the consumer by changing its behavior with respect to setting the sales price. It may pass the tax along, or shift it, to the final consumer, who may, in turn, escape tax liability by refraining from beer consumption. The income tax, on the other hand, will apply equally whether the individual chooses to drink beer or water. It is not easily shifted.

This generality of a tax also implies *directness.* A *direct tax* is defined as one which is borne by the individual upon whom it is levied. This is the same thing as saying that a general tax is a direct tax. It can be seen that, quite apart from economic effects, the direct tax has major advantages from the point of view of equity or fairness in the distribution of the over-all tax burden. The final burden, or *incidence*, of a tax rests squarely upon the shoulders of the person or persons upon whom the tax is levied by the government. There is no necessity to examine all of the secondary repercussions of the tax in order to determine who actually pays for the cost of the government services financed.

The personal income tax comes closer to meeting the criterion of generality and directness than any other tax that could be used as a major revenue producer in a modern fiscal system. But *the personal income tax is not a general tax.* This point should be emphasized. If the tax were completely general it would generate no changes in individual behavior; it would, in a sense, have no economic effects, and the remainder of this chapter need not have been written.

Before we discuss the reasons why the personal income tax does not fully meet the requirement of generality, it will be useful to examine the "ideal" general tax, even though it should be recognized that such a tax could never be very important in practice.

The "ideal" tax, in the sense of generating no changes in behavior, is the *lump-sum tax.* By this we mean a tax that is imposed on the individual quite independently of his wealth, his income, his occupation, his consumption pattern, his family status, his age, his work habits, or any other distinguishing characteristic. Only if the tax were completely unrelated to each of these characteristics would the individual find it impossible to escape some of the tax burden. The tax which meets these requirements is truly a lump-sum tax which the individual must pay. It is questionable whether such an "ideal" tax could ever be devised in practice, but the closest practical equiva-

lent to it is the *head tax* or *poll tax*, sometimes called also the *capitation tax*. This tax levies a fixed sum on the individual without reference to any particular characteristic. Mere mention of the head tax or poll tax as being the ideal tax from the basis of the generality criterion suggests, however, that many other criteria of tax policy conflict. The truly general tax could hardly be accepted on grounds of equity or fairness in the modern world.

ANNOUNCEMENT EFFECTS OF AN INCOME TAX

Although it comes closer to meeting the generality requirement than any other tax that would be practically acceptable, the income tax does have important *announcement* effects. By announcement effects we mean those changes in behavior that may be produced as a result of the imposition of the tax.

Work versus Leisure

First of all, the tax on income discriminates against the earning of income. To be at all practical, the tax must have some objectively measurable base, normally the money value of real income received by the individual. If, however, there is some direct relationship between the amount of the tax and the amount of measured real or money income, the individual may reduce his tax liability by changing his behavior. The ultimate scarce resource for all individuals is, of course, time, and earning income is not the only way in which time may be used. The tax on income puts a differential premium on leisure as opposed to income earning.

It is questionable as to how important this premium on leisure really is. The importance will vary from one culture and from one individual to another. In primitive and underdeveloped societies, the earning of money income is not so significant as in a developed economy. Hence attempts to raise revenues by taxing incomes in those societies may fail because individuals will respond by simply working less. On the other hand, in the more developed economies, the earning of income may be so important relative to the enjoyment of leisure that even quite heavy taxation of income will have little effect on human behavior. This result is reinforced by the existence of many institutional constraints which tend to fix some standard length of the work day, the work week, and the work year, even the work life, for many groups of the population. Some effects on behavior must be

present, however, even if the quantitative significance is difficult to ascertain.[1]

Income in Kind

We have already discussed one important variant of this announcement effect of an income tax. If the actual tax base includes money income only, a very strong incentive is provided for individuals to shift their actions so that they will receive income in kind, or, in other words, income which is nontaxable. All nonpecuniary equivalents of real income must be included in this category.

Effects in this direction are now recognized as being of major importance in American tax administration, and these become increasingly significant as institutions become more fully adapted to meet the conditions of a high-tax world. The result seems surely to point toward a gradual erosion of the income tax base, with more and more real income being received in such a manner as to allow the individual to avoid all or part of his ordinary tax liability.

Incentives to Save

Any tax on measured income of the individual will also tend to reduce the incentive of the individual to save *relative* to a tax on that part of income that is spent. One of the oldest debates in tax theory has been concerned with the so-called "double taxation of saving," a question that we have already discussed to some extent in Chapter 13. If income is defined as a flow of real goods and services to the individual over time, that income which is saved and invested is subjected to double taxation under any income tax. The income is taxed as it is originally received, and then the yield on the investment is taxed when it accrues in future periods. This conception of the problem has led many students to argue persuasively that income taxation involves an inherent discrimination against saving and should be replaced by a tax on expenditure. This argument may become more and more important as the over-all objective of modern society becomes more and more linked to a rapid rate of economic growth.

[1]For certain individuals and groups, the imposition of an income tax may actually increase the amount of work and decrease the amount of leisure. In technical economic language, the *income effect* resulting from the tax may more than offset the *substitution effect*. Although the point is perhaps controversial, this direction of effect does not seem possible for the *whole* social group. Since the tax revenues collected are presumably used to finance public services yielding real income to individuals, there would seem to be no net income effect for the group.

On the other side of the argument, if income is defined as an accretion in net worth of the individual, no double taxation of saving can take place. The individual's net worth increases as he initially receives income. He is taxed on this accretion, not on any concrete "flow" or real goods and services to him. If he chooses to save and invest a portion of this income received, his net worth will again increase over time, and he will be subject to a new tax on the new accretion to his wealth. No double taxation is involved at all. The difference between these two constructions depends on the difference in income definition, a difference that cannot be resolved analytically.

PROPORTIONAL AND PROGRESSIVE INCOME TAXATION

The announcement effects discussed in the preceding section occur under any tax levied on personal income as a base, quite independently of the rate structure of the tax itself. More specifically, the effects discussed would apply to a proportional income tax. But, as we have seen, income taxation in Western countries normally involves progression in the rate structure. That is to say, there is some discrimination among sizes of incomes received. This additional discrimination can be expected to lead to an additional set of announcement effects which we must now discuss. The progressive income tax is less general than the proportional income tax; it generates more influence on individual behavior.

The Decreasing "Price" of Leisure

The general discrimination against earning income and in favor of enjoying leisure is present under any income tax, as noted. But, if the rate structure is progressive, the discrimination becomes increasingly pronounced as the individual moves up the income scale. With the marginal rate of tax increasing, the "price" of leisure decreases at higher-income levels. Therefore, we should expect a more significant incentive effect among the higher-income groups.

A simple arithmetical example can illustrate the point. Let us suppose that, by working twelve months rather than ten, a medical doctor (one of the new rich in postwar America) can increase his annual taxable income from $100,000 to $120,000. Since the marginal tax rate on taxable income is 75 per cent for this range, the "price" of two months' leisure spent in Florida or the Caribbean is only $5,000 or only one fourth of the marginal income. By con-

trast, let us suppose that the college professor, by teaching two months in the summer school, can increase his taxable income from $10,000 to $12,000. Since the marginal tax rate for this range is 26 per cent, the "price" of the two months' leisure is almost three fourths the value of the marginal income. It follows that, by and large, the medical doctor will be somewhat more likely to "purchase" the leisure than will the college professor in our example, other things equal.

The importance of this effect on those who receive high incomes is very difficult to assess. The limited number of studies that have been made indicate that the incentive effects on the activity of members of the higher-income groups are easily overemphasized. Other considerations seem to be as influential, if not more so, in determining behavior of individual members of the high-income groups. Such things as prestige, institutional patterns, and social status seem to make the business executive, the corporation lawyer, the society doctor, and other like members of the richer classes pay less attention to the extremely high marginal rates of income tax than might be expected, at least insofar as the incentive to work is concerned. Any definitive conclusion on this effect would be premature at this time in any case, since only in the last quarter century have we experienced the very high marginal income tax rates. A quarter century is hardly sufficient to determine long-run effects when it is realized that work habits of those now earning the highest incomes were set in a period before the high marginal rates were introduced.

Rational Occupational Choice

To a certain extent at least, individuals determine the pattern of their earnings over a lifetime by the occupational choice made quite early in their lives. This important decision is, in many cases, not entirely a free one. For many individuals, opportunities for entering many of the professions and occupations are closed, for many reasons, some necessary, some wholly unnecessary. Even where widespread opportunities exist, the important occupational or professional decision is often made on quite capricious and nonrational grounds. Despite all of these important qualifications, however, it must be recognized that individuals do, in some degree, *choose* the income stream that will come to them over time. For example, the college student choosing to pursue an academic career may be doing so deliberately in the face of the knowledge that he is not going to maximize

the present value of his expected money earnings stream in this way. He may be perfectly rational in this; he may consider the nonmonetary rewards of the academic career to be sufficient to more than offset the monetary differential. This individual may be contrasted with his roommate (who we shall assume has the same capacity for entering an academic career) who chooses to enter business because in so doing he values the expected monetary reward more highly.

Insofar as the actual income differences among individuals result from such rational choices as ways of earning income, the progressive income tax can exert important influences on individual behavior. The tax clearly places a differential premium on those occupations and professions that promise nonmonetary advantages, and a differential discount against those occupations and professions, perhaps somewhat disagreeable in themselves, that promise the highest monetary returns. The effect is to cause a relatively smaller number of men to choose the higher-income, but "undesirable," professions and occupations.

Over a long period of time, this effect of the progressive income tax may well be more significant than that which operates directly on the incentives of individuals in choosing to modify hours or days or years of work once a profession has been chosen. With continuing high rates of progression in the income tax, young men will become more and more attracted to the "safe" and "soft" professions, to those activities that lack adventure, that are not risky, that promise to yield a "quiet" life, in modern middle-class suburbia. In fact, a limited number of studies of the attitudes of young men in the 1950's supports the thesis that this effect has already taken place. Young men are less interested than in previous generations in becoming "rich," in striving to become "captains of industry"; their goal seems to be a safe spot in middle management, public or private. Of course, it would be folly to insist that this shift in attitudes, if it has occurred, is due wholly, or even primarily, to the progressive income tax. But it would be almost equally foolish to fail to see that the tax can be of importance in producing changes of this sort.

One particular point remains to be mentioned in this connection. The progressive income tax will have the effect of discriminating against ventures which involve high degrees of risk and uncertainty. Those occupations and professions which offer to the individual a small chance of making a great gain along with many chances of losses, will tend to be abandoned. If the individual is fortunate, he will earn the high income; if he is unlucky he earns no income and

may go bankrupt. But with the progressive income tax, he pays the full amount if he is lucky; he gets no subsidy for his efforts if he loses. The individual will be quite reluctant, or at least more reluctant, to enter risky professions, or to undertake risky ventures within the ordinary work of any given profession. Risk taking is very much less than would be present under a proportional income tax.

Incentives to Save

As noted previously, any tax on income does, in a certain sense, discriminate against saving and in favor of consumption spending. The particular impact of a progressive income tax on saving is quite different from this.

It is generally recognized that the proportion of income saved increases as income increases. In other words, individuals with higher incomes save proportionately more than individuals with lower incomes. This being true, it follows that a progressive income tax, which bears most heavily on higher incomes, will reduce saving more than a proportional income tax of comparable yield.

This impact of the progressive income tax on the saving decisions of higher-income individuals was used favorably in the early post-Keynesian days of the late 1930's and early 1940's. Many students attributed the cause of the Great Depression to an excessive amount of saving. If this explanation is accepted, it follows that the levy of a more progressive tax which reduces saving will be beneficial during such periods.

The opposing argument has recently become more widely accepted. If the causes of depression are held to be primarily monetary, and if the goals of economic policy come to be shifted more and more in the direction of stimulating a more rapid rate of growth, any institution that tends to restrict real saving is undesirable. Therefore, the impact of the progressive tax on saving has shifted from an alleged advantage to a major disadvantage within the last twenty years.

EFFECTS OF EXISTING DEFICIENCIES IN INCOME TAXATION

The effects already discussed are necessary results of progression in the income tax structure. Additional effects may be caused by the specific characteristics of a given tax system. It will be useful to discuss some of these effects that stem from the United States system of income tax administration. Since these effects can, for the most

part, be eliminated by sensible fiscal reform, they may be attributed to "deficiencies" in the American tax laws.

Absence of Averaging

From a purely economic point of view, perhaps the most objectionable feature of the personal income tax, as it is currently administered, is the absence of any effective provision for the *averaging* of incomes over periods longer than one year. Since income is a flow conception, some time dimension must be a part of the tax base. Income per year, per ten years, or something must be the base of the tax. But there is no need that income in *one* year should be the exclusive criterion for determining tax liability in that year.

Under a proportional rather than a progressive income tax, there would be no problem in this respect. Let us suppose that an individual receives his taxable income over three years as follows:

First year	$ 10,000
Second year	100,000
Third year	10,000

If the tax rate is proportional at 10 per cent, the individual will pay $12,000 in total taxes over the three years. This total will be the same as that paid by the individual who receives taxable income as follows:

First year	$40,000
Second year	40,000
Third year	40,000

The tax bill over the three years will be $12,000, and the individual faced with a possible choice between these two hypothetical income streams will not be affected by the absence of any chance to average his tax payments over time.[2]

The situation becomes wholly different when we consider the application of progressive income tax rates. Here the fact that the higher income, *in any one year*, is taxed at a higher rate, will cause the fluctuating income to be sharply discriminated against in comparison with the treatment of the more stable patterns of income over time.

[2]In the simple numerical examples used here, we neglect the problem of comparing present values of the separate income streams. The fact that both of the income streams total to $120,000 over the three years does not, of course, suggest that these two are equivalent when measured in present value terms. This comparison will depend on the rate of discount of future income held to be appropriate.

We may illustrate this by reference to the same numerical example. Let us say that the average rate of tax on the $10,000 taxable income is 20 per cent, whereas the average rate on the $100,000 income is 50 per cent. The individual receiving the first pattern of income would pay taxes in the amounts of $2,000, $50,000, and $2,000 over the three years, or a three-year total of $54,000. By contrast, the individual who receives the stable taxable income, who gets an equal amount each year, will pay an average tax rate of about 35 per cent on each year's income. His tax bill will be approximately $14,000 each year, and over the three years he will pay about $42,000 in taxes. Thus, he will be forced to pay $12,000 less in federal income taxes solely by reason of his earning his income in a more uniform manner over time. These numerical computations are, of course, very rough. But they are based on currently existing tax rates, and they should be sufficient to indicate the severe discrimination that the absence of averaging provisions introduces against the sharply fluctuating incomes.

Pronounced differences of this magnitude must exert some influence on individual behavior. The individual will try, whenever possible, to choose the most stable income pattern over time. He will be reluctant to enter into those employments and investments which promise high rewards in a few years. As a result, relatively too few economic resources are attracted to those areas of investment, human and nonhuman, which yield income in a fluctuating manner. For example, the professional athlete, who earns high income during only a few years, is subjected to a much greater burden of income taxation than is the salaried employee whose lifetime earnings may be identical.

This discrimination against fluctuating incomes is closely related to the discrimination against risk and uncertainty already discussed. For the most part, risky ventures tend to be those that do yield highly fluctuating incomes over time rather than stable incomes. Therefore, the absence of averaging provisions tends to reinforce the already existing discrimination against risk that progressive taxation must involve.

The effects discussed here could be all but eliminated by the introduction of some allowance or provision for *averaging* of incomes over time. On both economic and equity grounds, there is a strong argument for allowing all individuals to average their incomes over some span of years rather than to base annual tax liability on annual income alone.

Ideally, an averaging scheme would allow the taxpayer to compute his income tax on the basis of the earnings stream over the whole lifetime, and it would also allow full loss offsets for those years in which the individual earns negative income. However, the major improvements needed could be accomplished through averaging provisions much less ambitious, and much more practicable, than the ideal one. Some means whereby the individual taxpayer could be allowed to compute his annual tax liability on the basis of a five- or ten-year moving average would be sufficient to eliminate most of the unfairness and also to eliminate most of the effects of an economic nature.

The only argument against the introduction of averaging is that it would make administration of the personal income tax more difficult. Administrative complications would, of course, arise, but this seems to be a rather slender argument when the major advantages of this reform are fully recognized.

Favorable Treatment of Capital Gains

The American income tax is not based on an internally consistent definition or conception of income, as we have noted. If it were, capital gains would either be wholly exempt from the tax or fully subject to the tax.

If the flow conception of income is adopted, capital gains are simply not income. The British income tax embodies this view. The implication is that capital gains are quite distinct from ordinary income, and that conversion of ordinary income into capital gains and vice versa is not easy to accomplish. The British tax does not count traders' gains as capital gains but as ordinary income that is fully taxable, and even for gains of nontraders some quite arbitrary distinctions must be made between fully taxable ordinary income and tax-exempt capital gains.

A full acceptance of the accretion conception of income would require full taxation of capital gains and full deductibility of capital losses. Under this view, any accretion in the individual's net worth is properly includable in the income tax base.

The American tax is closer to the accretion conception of income, but we have never been willing to accept the full taxation of gains except during the earliest years of income tax administration. The tax that exists is a compromise on this point. As previously stated, long-term gains are taxable but at especially favorable rates. No

sharp distinction is made between ordinary income and long-term gains as is the case under the British tax.

As a result of this compromise treatment, the existing law does generate major economic effects by causing individuals to convert ordinary income into long-term capital gains where this is possible. The individual who succeeds in accomplishing this reduces his tax liability considerably.

There are several ways in which such conversions can be carried out. The ordinary receipt of income may be exchanged for an equity share in a firm, and as the equity share values rise over time, the income taken out of the business becomes taxable to the individual as a long-term capital gain.

The most familiar example of this procedure is provided by the proliferation of the independent movie-producing companies in the postwar years. At the extreme, a new company is organized for each producing venture and the "star" is given a large equity in the corporation in lieu of a fancy salary. If the film is successful at the box office, the value of the equity in the corporation increases quite rapidly. If the "star" takes out his share by selling off or liquidating his equity holdings, he is subjected to a maximum tax rate of only 25 per cent. On the other hand, had the earlier procedure been followed in which the "star" receives simply a handsome salary from an established producing firm, the marginal tax rate on the income may be three times as high.

This example is useful because it is an extreme method of converting income into capital gains. The more flagrant cases of this type have been limited somewhat in recent years by the Internal Revenue Service. In many cases, however, the same procedure can still be followed, the only requirement being that some purpose other than tax avoidance must be demonstrated, normally a rather easy task to accomplish.

A much more important, and more pervasive, method of converting income into capital gains is provided by the practice of modern business corporations to plow back retained earnings into investment. The activity tends to increase the net worth of the corporation, and in so doing to increase the equity share values. The equity owners of the corporation receive capital gains, and if they choose to take income out of the corporation they do so by selling shares on the market. The difference between the selling price and the original buying price is taxable as a long-term gain. Thus, it becomes advantageous for the individual to invest funds in a corporation that

does follow this practice to some extent rather than the opposing one of paying out all of its earnings as dividends to stockholders. As in the preceding example, the more flagrant abuses of this conversion process are not allowed. The mere establishment of a tightly controlled corporation for the sole purpose of tax avoidance is not legal under current rulings. But the widespread importance of this sort of conversion on the structure of the American economy cannot be denied.

Long-term capital gains, when taxed, are subjected to a maximum rate of 25 per cent. In some cases, however, long-term gains escape taxation altogether. This possibility also causes some distortion in the pattern of resource usage in the economy. Long-term gains may escape taxation if they are not *realized*, that is, if they are never converted into money units. The individual is required to report long-term gains, not as they accrue to him as addition to his net worth, but when he realizes these gains through sale. For example, suppose that an individual purchases an asset for $1,000 in the year 1960, and that this asset appreciates in value by $100 per year thereafter, over and above full allowance for maintenance and depreciation. Actually, the capital gains accrue at the rate of $100 each year. But the individual would only have to report the gain for tax purposes when he decides to sell the asset. Thus, if he decides to sell in 1965, and does so for $1,500, he must report a long-term gain of $500, which is taxable at the capital gains rate. It follows that, if the gain is never realized, the tax could be avoided.

This is essentially what does take place upon transfers of capital assets by gift or at death. If, for example, the individual purchasing the capital asset in 1960 at $1,000 holds the asset until 1980, it will be worth $3,000 under our assumptions. Assume that he dies in 1980 and that his son inherits the asset. No capital gains tax will be paid on the $2,000 accretion in value because the son will be allowed to adopt a new base for his own subsequent tax liability. This new base will be the market value at the time of receipt. The $2,000 gain over the original owner's lifetime is never subjected to tax at all.

If we consider the desirability of eliminating, where possible, undesirable economic effects of the personal income tax, and if we adopt the accretion conception of income, there is a strong argument for modifying the current tax law so as to make all capital gains fully taxable. There are, however, three fundamental reasons why that step could not be taken unilaterally.

First of all, the absence of effective averaging provisions, already discussed, would make the existing tax discriminate sharply

against capital gains income, especially if the latter is to be reported only when realized. By the nature of capital gains, these will be fluctuating. Hence, to make this source of income fully taxable without some averaging would cause those earning income in this way to pay unduly high rates. If gains were to be taxed as they actually accrue to the individual, this sort of discrimination would be, in part, eliminated. In one sense, the current favorable treatment of long-term capital gains can be viewed as a rather poor method of allowing some averaging.

Second, any proposal to include long-term gains in taxable income subject to normal rates would have to include some allowance for long-term capital losses. Full loss offsets would necessarily have to be provided in order to prevent the taxing of capital gains from seriously hampering the undertaking of risky and uncertain ventures. Although the law currently grants favorable tax treatment to long-term gains, it does not allow adequate deductibility of capital losses. This fact serves to mitigate somewhat the announcement effect of the favorable treatment of gains; individuals will not try to convert ordinary income into long-term gains so much as they would if losses were symmetrically treated.

The third, and perhaps the most important, reason why the inclusion of long-term gains in fully taxable income would not be desirable now without other fundamental reforms is the extremely high level of marginal rates on upper-bracket incomes. The capital gains loophole allows a large number of individuals at the upper end of the income scale to lower the effective rates of taxes paid substantially by the conversion discussed. In a very real sense, the favorable treatment of gains allows the high rates of progression to be a delusion. Surely a more honest and efficient means of reducing the higher-bracket rates would be simply to reduce them. If higher-bracket marginal rates were to be substantially reduced, if full loss offsets were allowed and effective averaging provided, serious consideration could then be given to the inclusion of long-term gains as well as short-term gains into the ordinary tax base. Until these more basic reforms are accomplished, the current treatment of long-term capital gains will probably be continued.

CONCLUSION

No tax that would be acceptable and at the same time practically workable can be completely general in the sense that it exerts no economic or announcement effects. Of the major revenue producers

currently employed in Western countries, the personal income tax meets the generality criterion better than any other tax. But the tax does exert major influences on individual behavior.

Any conclusions concerning the economic effects of the current tax in the United States must be viewed as provisional and premature. Tax rates at the currently high levels have not been employed for a sufficiently long time to determine effects on individual incentives to work, to save, and to invest.

Any income tax must, to some extent, affect the decision to earn income itself, and it also must affect the type of income earned, placing a differential premium on the earning of income that is excludable from the tax base, notably income in kind. The progressive income tax exerts more pronounced effects than the proportional income tax, which is, by definition, a more general tax. The progressive tax will discriminate more against risk taking, and it will tend to reduce the rate of saving. These two effects will become more important considerations as the acceleration of economic growth becomes a more important social objective.

Some of the undesirable effects of the personal income tax can be reduced by tax reform, notably by some introduction of averaging. Some change in the treatment of capital gains can also reduce the distortions caused by the income tax, although reforms in capital gains taxation are dependent on other reforms.

The income tax can be expected to continue to provide a major share of revenues in the fiscal system of Western countries. If currently high rates of tax are to become more and more permanent, especial consideration should be given to the introduction of long-range reforms which reduce the distorting effects of the tax to a minimum while at the same time preventing a wholesale erosion of the tax base.

Chapter 24 THE CORPORATION INCOME TAX

The corporation income tax is second only to the individual or personal income tax as a revenue producer for the federal government. Table 24–1 indicates the relative importance of the separate revenue sources in the federal budget, not including revenues which go into special trust fund accounts. The tax on corporate income provides more than one fourth of the revenues incorporated in

TABLE 24-1

Federal Budget Receipts, Fiscal 1961 (Estimated)

	Receipts (In millions)	*Per Cent of Total*
Individual income tax	$43,706	52.0
Corporation income tax	23,500	28.0
Excise taxes	9,523	11.3
Employment taxes	340	.4
Estate and gift taxes	1,620	1.9
Customs	1,376	1.6
Miscellaneous receipts	3,935	4.7
Total	$84,000	99.9

the administrative budget. The yield from the tax is somewhat more than half that provided by the tax on personal incomes. Taken together as taxes on income, the two taxes dominate the revenue structure of the federal system, making up about 80 per cent of the total.

The relative importance of the personal income tax in comparison with the corporation income tax is a postwar phenomenon. Up until 1944, the corporation income tax was a more productive revenue source than the tax on individuals. While wartime rates on both individual and corporate incomes have, to some extent, been retained

in the postwar period, corporation income has not assumed its previous relative importance as a tax base. Given the current high level of rates, it seems probable that still higher taxation, if required, would further increase the relative revenue differential between the two sources.

THE TAX BASE

The corporation income tax, as it is applied in the United States, treats the business enterprise or corporation as a legal person. The income of this enterprise is subjected to taxation in much the same manner as individual income. The definition of income is similar in the two cases. In fact, the Internal Revenue Code includes both the tax on individuals and the tax on corporations under the same major heading, Income Tax, and many of the provisions of the Code apply equally to both entities.

All receipts of the corporation over and above actual expenses are taxable, after appropriate deductions for depreciation and for interest paid out on loans. Of course, no personal exemptions are allowed the corporation, and a rather limited set of special deductions. In addition to interest and state and local taxes, the corporation may take a deduction up to 5 per cent of income for contributions to nonprofit organizations.

Capital gains are treated in the same way under both taxes. Long-term gains are currently taxed at a rate of 25 per cent for corporations, the maximum rate applicable to individuals. Capital losses are deductible to the extent that they offset capital gains, although there is a certain allowable loss carry-over here as with the individual tax.

RATE STRUCTURE

The major difference between the corporation tax and the individual income tax lies in the rate structure. The corporation income tax is, fundamentally, a proportional rather than a progressive tax. A standard rate is imposed on all corporation income with a surtax rate on all income above $25,000. This single step in rates makes the over-all tax slightly progressive, but the effective marginal rate on corporation income is the combined normal and surtax rate because corporations receiving annual net incomes of more than $25,000 are of overwhelming quantitative importance.

Currently (1960), the normal rate of tax on corporation income is 30 per cent. That is to say, all taxable income is subjected to a tax of 30 per cent. In addition to this normal rate, a surtax of 22 per cent is imposed on that income in excess of $25,000. The effective marginal rate is, therefore, 52 per cent. A planned reduction of the normal tax rate from 30 per cent to 25 per cent, which would reduce the marginal rate from 52 to 47 per cent, has been scheduled for several years, but continuing federal revenue needs have caused this reduction to be delayed many times.

RATIONALE OF THE TAX

As suggested previously, the corporation is treated as a legal person for purposes of taxation. This treatment follows directly from the legal practice of considering the corporation in this way for many purposes, but it should be obvious that the corporate entity is, in no meaningful sense, something separate and apart from the living persons who own the entity. The tax on corporation income must be finally paid by some individual. In other words, the tax must result in the income of some individual or set of individuals being lower than it would be without the existence of the tax. Viewed in this light, there would seem little justification for taxing persons through the fiction of the corporation, as it were. A much more straightforward manner of taxing individual persons would seem to be to assess the full burden on them directly through the income tax on individual income receipts.

Attempts have been made from time to time, however, to provide some rationale for the levy of taxes on the corporation as distinct from the person. While the ultimate impact of the tax on some persons cannot be denied, it may be argued that the privilege of doing business in the corporate form is a privilege sanctioned by government, and that this privilege, in itself, is sufficiently valuable to those who invest in this form of business organization to warrant the levy of a special tax. This argument would carry considerably more weight if the advantages of conducting business under the corporate form were not quite so great. Actually, the major share of business activity in the United States is conducted by corporations. This general usage of the corporation reduces the argument for the separate tax on corporate income, for, if most investment takes this form, there is no real differential advantage provided by government to any special group of investors.

The attempts to justify the imposition of a tax on corporate income are, for the most part, made after the tax has been in existence for some time. It is far easier to explain the origin and the continuation of the tax than it is to provide a justification for it. The explanation is very simple. The political decision makers find it very easy to impose a tax on corporate income and very difficult to impose a tax on individual income. This is in large part due to the fact that the corporation is, in fact, a legal entity. Private people treat the corporation as something apart from its owners, and the real incidence of the tax, as we shall see later, is difficult to locate with any precision. Legislative bodies encounter relatively little opposition to taxes on corporate incomes. This becomes doubly true when the political climate is unfavorable to business.

CYCLICAL INSTABILITY OF REVENUES

The tax is based on the net incomes or profits of corporations. This includes both pure economic profit and the yield on equity capital. Both of these income shares tend to be residual. That is to say, contractual obligations of the corporation to pay for materials, to pay wages and salaries to workers, and to meet interest on bonded indebtedness represent the primary claims against the gross income. Only after these primary claims have been met does net income appear. This almost guarantees that in any situation where there is any degree of market fluctuation over time, the tax base will fluctuate rather widely from year to year. For this reason we find the revenues collected under the corporation income tax to be the most unstable federal revenue source.

To provide only a single factual illustration of this point, we need only to examine briefly the relative change in the collections from the corporate tax and the individual tax in the 1954–55 business recession. Table 24–2 incorporates the necessary data. Note from the table that, whereas individual income tax collections fell but slightly from fiscal 1954 to fiscal 1955, the year of the impact of the recession on tax revenues, the corporate income tax collections fell by a substantially greater amount, both relatively and absolutely.

This instability of corporation income tax revenue over the separate phases of the business cycle is an advantage rather than a disadvantage of the tax itself. As discussed previously in Chapter 11, one of the currently accepted norms for fiscal policy is built-in budgetary flexibility. In accordance with this norm, revenues should

TABLE 24–2

Corporate Tax Collections and Individual Income Tax Collections, 1953-57

Fiscal Year	*Individual Income Tax Collections (In millions)*	*Corporate Income Tax Collections (In millions)*
1953	$32,536	$21,959
1954	32,814	21,546
1955	31,650	18,264
1956	35,338	21,298
1957	39,029	21,531

fall off sharply in a recession, generating a deficit in the budget and, through this, encouraging economic recovery. In turn, revenues should increase sharply during periods of threatened or actual inflation, creating surpluses and choking off undesired booms. In order to achieve this result, the fiscal system must include on the tax side certain important taxes which are cyclically quite unstable in the proper direction. Considered in this way, the corporation tax admirably suits this stabilization purpose.

THE DOUBLE TAXATION OF CORPORATE INCOME

Judged from the point of view of fairness of equity in the distribution of the over-all tax burden among persons, the corporation income tax comes off very poorly in comparison with other taxes, and especially in comparison with the personal income tax. The levy of the tax on the income of the *corporation*, without regard to the *personal* ownership of the corporation, leads to a situation where the actual rate of tax, assuming that owners do pay the tax, imposed on any individual is entirely capricious and almost unpredictable. If individual income is accepted as the most appropriate criterion for determining personal tax liability, the tax levied on corporate income is inequitable regardless of the incidence. If the tax falls on the equity shareholders of the corporation, the individual bearing the tax may be in a high-income or a low-income group. There is no necessary connection between the amount of common stock owned and the place in the income scale. But all individuals are subjected to the same rate of tax in this part of the fiscal system. If, on the other hand, the tax is passed along to consumers, it is equally unfair. While over-all consumption may be a justifiable basis of taxation in

some cases, little argument can be made for a discriminatory tax on those consumers who enjoy the products and services of the most profitable corporations.

The equity argument against the corporation income tax has often been put in terms of the double taxation aspects. If the flow conception of income is adopted, and if the tax is supposed to rest, in whole or in part, on the equity shareholders, the income of the corporation is subjected to double taxation, once as it is received as gross receipts of the corporation and secondly as it is received by the individual in dividend payments. As suggested earlier, the owner may escape a portion of the second tax by allowing the corporation to plow back earnings into expansion; but even here, if the capital gains are to be realized, the individual must pay the capital gains tax. Some recognition of this double taxation is now included in the allowance made in the personal income tax for a "Dividends Received Credit," which does serve to counteract the double taxation, but to a relatively minor degree.

If the accrual or accretion conception of income is adopted, there can be no double taxation. The whole question reduces to determining the most suitable criterion for placing a tax on individuals, for everyone must accept the fact that individuals, as such, ultimately pay all taxes. Thus, whereas the advocate of the flow conception of income would emphasize the double taxation, the advocate of the accretion conception would stress the inequitable treatment of the particular individuals who happen to be equity shareholders. There is little difference in the two positions. In either case, the special discrimination against corporate income receivers is not clearly justified.

An argument in favor of some discrimination may arise from the idea that, in the United States individual income tax, no special advantage is provided for receipt of the so-called "earned income," that is, income received for the sale of labor services. There is some justification for treating labor incomes more favorably than nonlabor incomes. This is because a tax system cannot easily allow a deduction for depreciation of human capital. Yet it must be acknowledged that a part of all labor income is necessary to keep the "asset" of the human being alive and maintained. This distinction between labor income and nonlabor income, the income from assets and claims, suggests the appropriateness of some adjustment in rates, as the British tax does include. But since there is no such adjustment in the American rate structure, the added tax on corporate income finds

some support. However, even on these grounds, a more suitable alternative would seem to be the substantial reduction of the corporation income tax and the allowance for some earned income credit in the personal tax.

DIRECT ECONOMIC EFFECTS

Debt versus Equity Financing

Any tax on corporation income seems certain to exert some effects on the behavior of corporations. One of the most important of these lies in the incentive provided to the corporation to finance expansion through borrowing rather than the raising of equity capital, that is, through the sale of bonds rather than common stock.

The tax is imposed on the net income of the corporation, sometimes called net profit, and this profit or income is defined in the way that *accountants* define profits. Actual expenses are deducted from gross receipts, and allowance is made for interest paid out on loans and for depreciation of capital equipment. But no allowance is made for dividends on equity capital invested in the corporation, even to the extent of some estimated "normal" or "average" rate of return. Because the tax does not allow for some deduction of an average yield on equity capital investment, it actually is imposed on a part of the gross receipts which the *economist*, as opposed to the accountant, would call "opportunity cost" rather than "profit."

In many cases, the corporation will face a choice between two methods of financing an expansion from external sources. It may try to expand its equity, that is, it may sell common stock. Or it may increase its indebtedness, that is, it may sell bonds. Since the tax allows the interest payments on bonded indebtedness to be deducted from gross income before computing tax liability and does not allow any deduction at all for a return on equity capital, the corporation often finds it advantageous to secure the additional external capital by the sale of bonds.

This tax-induced premium placed on loan financing causes the corporate financial structure to become distorted in the direction of too much debt and too little equity. The structure becomes more vulnerable to shifts in the gross income of the corporation. The bondholder continues to have a primary legal claim against the income and assets of the corporation, even if the market situation is extremely poor. The common stockholder, on the other hand, is a residual claimant. He can claim income only if income first exists

and if all primary claims against it have already been met. Over-reliance on debt financing tends, therefore, to make the corporation much more susceptible to the threat of bankruptcy and liquidation during times of economic stress. The flexibility of the economy in responding to fluctuations in business conditions is to some extent reduced by this distortion of the financial structure of corporations.

Expenditure to Secure Nontaxable Income

The high marginal rate of tax on corporate income, currently 52 per cent, must change many decisions of the managers of corporate enterprises. In a very real sense, when the corporation spends one additional dollar in a manner that may be counted as an additional cost, it is bearing only 48 cents of this cost. The remaining 52 cents is being shifted effectively to the shoulders of federal taxpayers in general. For each additional dollar spent by a corporation that may be classified as additional cost, there is a net reduction of 52 cents in federal government revenues. The results of this seem clear; corporation managers will be less careful in making corporate outlays than they would be where the full outlay represents real cost to the corporation or its shareholders.

Care must be taken, however, not to press this apparent point too far. Insofar as an additional dollar's worth of outlay is intended to produce an additional dollar's worth of ordinary income or more, the tax need not affect decisions of management a great deal. While it is true that the corporation will only be giving up 48 cents for each additional dollar of cost outlay, it will also earn only 48 cents on each additional dollar of income that it receives from the outlay. The marginal decision as to whether or not to undertake the production of additional output, to add a new line of goods, or to introduce an innovation, for example, should not be greatly affected by the existence of the 52 per cent marginal rate.

Certain outlays exist which will add to cost but will not directly add to taxable income. These cost outlays will provide a nontaxable return, and the incentive provided to expand this sort of outlay is evident. For example, the effects of an increased outlay on institutional advertising may serve to increase the prestige and goodwill of the corporation without adding measurably to short-run taxable profits. There seems to be little doubt but that corporations will be encouraged to spend more on such ventures, which are essentially productive of rather generalized long-range benefits not directly, or at least currently, subject to tax. Another familiar example often dis-

cussed is corporation resistance to wage demands of unionized employees. If a corporation management feels that the granting of a general wage increase will lead to a more tranquil period of labor relations, this is one way that management, but not the stockholders, can secure a higher nontaxable "real income." The salary scales for corporation executives will be similarly boosted because of this factor. If the existence of the tax does encourage corporations to be less resistant to wage and salary demands of employees, then the tax itself may be given some credit for generating conditions conducive of the so-called "wage-cost inflation" of recent years.

INCIDENCE OF THE CORPORATION INCOME TAX

The incentives provided corporations to shift from equity to debt financing and to undertake certain expenditures which would not otherwise be rational produce the direct economic effects of the corporate income tax. More complex and indirect effects of the tax are also present, and the discussion of these introduces the question of incidence, a question that has been the subject of much discussion and debate, both among businessmen and economists.

Who does pay the corporation income tax? This is a very important question since some $20 billion are collected annually from this source at the present time, and this total can be expected to rise as the economy grows unless rates are reduced. The answer to this question will depend on the announcement effects that the tax is assumed to exert, and these effects will, in turn, depend on the appropriately chosen analysis of corporate behavior.

The discussion may proceed by separate stages. If the tax were levied only on the "pure" profit of the corporation, that is, if some allowance were made for some "normal" rate of return on equity capital and this was deducted from the tax base, the economist would predict that the tax could not be shifted to consumers either in the short run or the long run. If the tax is placed on pure economic profit, and if it takes the form of a percentage rate of this profit, the corporation would not find it advantageous to modify its behavior in any way. Profits are maximized when marginal revenue from sales equals marginal costs, and the tax on pure profits cannot directly affect either marginal revenue, which depends on consumers' evaluation of the product, or marginal cost, which depends on the production function. If the corporation is maximizing pure profits in the absence of the tax, it cannot improve its profit position after the tax by changing its behavior. Output will remain unchanged, and the prices

of final products remain unchanged. The tax reduces the net income accruing as a residual to the owners of the equity shares. The final incidence of the tax rests on the individuals who invest in corporate stock.

This economic analysis of the incidence of the tax provides a useful starting point. But two major qualifications must be discussed. As suggested previously, the tax is not actually imposed on pure economic profits. No allowance is made for the genuine opportunity costs of owner-invested capital. Secondly, there is some reason to think that corporations do not, in the real world, maximize profits in the sense assumed in the preliminary economic analysis traced previously. Either or both of these qualifications might substantially affect the conclusion that the tax is not shifted. It will be convenient to discuss each in turn.

The failure of the corporate tax to exclude a normal rate of return on equity capital from the tax base suggests the possibility that individual investors may escape some of their tax liability by shifting investments to other assets than corporate stock. This sort of shift does certainly occur. Individuals invest smaller amounts in equity shares relative to investment in other forms of business enterprises, the individually owned proprietorship and the partnership. The great advantages from having a business enterprise organized in the corporate form reduce the magnitude of this particular shift, however, and the over-all impact seems of rather limited importance. In the modern economy, the corporation is the dominant form of enterprise, and, insofar as funds are to be invested in the carrying on of a business operation, these funds will likely be invested in a corporation in spite of the differential tax on corporate income.

A second effect will be the shifting of some funds away from direct investment in the operation of business enterprises. Individuals will try to escape the tax by investing in fixed-yield claims and real assets (bonds and real property). This shift will drive the price of these assets and claims up and yield rates down until an equilibrium is re-established after the imposition of the tax. On balance, the total investment in fixed-yield claims and real assets is probably larger than it would be in the absence of the corporation tax.

The most important effect of the tax will be that of reducing the marginal return on all income-earning assets, the marginal productivity of investment throughout the economy. As this reduction in yield takes place, it may affect the incentive of individuals to save,

and through saving, real capital formation may be modified. Effects of this nature cannot be predicted with certainty, but some reduction in the over-all rate of capital formation seems more probable than its opposite.

The three foregoing effects—the shift from corporate to other forms of business enterprise, the shift of investment from equity shares to real assets and claims, and the possible reduction in saving and the rate of real capital formation—combine to make total investment in enterprises organized as corporations less than it would be without the tax, other things in the analysis being equal. From this it follows that output produced in the corporate sector may be somewhat lower than it might otherwise be. Therefore, prices may be somewhat higher than would otherwise be the case. In this way, the tax may be said to be partially shifted to the consumers of the products produced in the corporate sector. In the long run especially, the tax may be said to fall on both the investors of real capital generally and the consumer of products and services.

It should be noted, however, that whatever shifting of the tax to the consumer that does take place in this model takes place only over the long run, after full allowance is made for a shifting of investment from the corporate sector. A temporary or short-term shifting of the tax to the consumer cannot take place, even when it is fully recognized that the tax, as actually imposed, does not fall on pure economic profits. This modified analysis does not substantially affect the conclusions of the more simple model. The primary incidence of the tax rests with the investor, and any significant reduction from currently high rates of tax could not be expected to lead to any sizable short-run reductions in the prices of goods and services.

The second modification must now be examined more carefully. A short-run theory of tax shifting must introduce some different assumptions about the nature of the pricing process. If the corporation is assumed not to maximize the present value of its expected profits stream but instead is assumed to price its products and services on some cost-plus or "satisfactory" profit basis, the tax may immediately be shifted to the consumer. In this case, a tax reduction would redound to the short-run benefit of the consumer.

The point at issue with regard to this modification concerns the appropriate model for analyzing the operation of the whole business sector of the economy. If the economy is strongly competitive, the very pressure of competition will force business enterprises to follow a profit-maximizing policy in order to survive. The firm that fails

to maximize profits, which may be negative as well as positive, will be left out of the race. In strongly competitive sectors, therefore, no effective short-run shifting of the corporate income tax is possible. On the other hand, in the monopolized sectors of the economy, the firm is not placed under the same pressure to be efficient in its operation and pricing policy; the competitive necessity to follow a profit-maximization rule is not present. The firm possessing substantial monopoly power can decide to follow a policy of pricing its goods at a level that will yield to it "satisfactory" profits. This policy may also be advantageous in that it will serve to keep out rival enterprises in closely related areas. Under these assumptions, an increase in the corporate tax rate may lead the firm to increase the selling price of its products sufficiently to insure that the same profit is received at the new level as before. The tax is effectively shifted forward to consumers. And a substantial tax reduction in this case might, if the firm desires, lead to a lowering of product prices.

On balance, firms both willing to forgo profit opportunities and able to forgo them over the long term seem relatively scarce. If this conclusion is accepted, the conclusion of the initial simplified model remains largely true. Little of the corporation income tax is shifted to consumers, either in the short run or the long run. The tax must rest, to a considerable extent, on the owners of corporate enterprises.

EFFECTS ON ECONOMIC GROWTH

Most students of the corporation tax are agreed on the conclusions reached in the preceding section to the effect that most of the tax burden rests with the owners of corporation stock. The effects of the tax on economic growth, if there are any, must stem from the induced changes in the behavior of investors. Ultimately, the effects depend on the response of individual savers to a lowering of the marginal rate of return on investment throughout the whole economy. If individuals are led by this reduced rate of return to save less out of current income and to spend more on current consumption, the tax is a factor in retarding growth, which depends so largely on the rate of real capital formation.

There is little concrete evidence to suggest that individual plans to save are really affected significantly by changes in the rate of interest. This is one very important relationship which economists cannot predict, even in the sense of being able to outline the direction of the effect. There seems to be somewhat more acceptance of the view that

the amount of saving is positively related to the rate of interest, but the agreement is far from universal on this, and even if it were, there would be no way of determining the strength of the relationship.

In the modern economy, much saving is done by the corporation itself. As a result, a large part of the investment in new plant and equipment is made out of retained earnings (savings) of the corporation. At first glance it may be concluded that the 52 per cent marginal rate of tax would tend to make additional investment in plant expansion less attractive than if this rate were lower. But this conclusion may be shown to depend on the relationship discussed in the preceding paragraph. Presumably, if the corporation is led to limit its expansion out of retained earnings because of the tax, the earnings which would have otherwise been invested would now be paid out as dividends. But whether or not equity shareholders desire additional dividends depends on the opportunities for the alternative uses of these funds. Unless the tax tends to shift expenditures from saving to consumption, there would be no reason to expect the corporate management to slow down the rate of internal financing.

If the corporate tax is considered along with the individual or personal income tax, one factor tends to accelerate economic growth. The lower rate of tax on long-term capital gains makes it advantageous for many stockholders to invest in corporations that do retain earnings and invest these in plant expansion. While this is primarily due to the personal income tax treatment of long-term gains, it suggests that any growth-retarding effects that the corporate tax may have are, at least to some extent, offset by this feature of the fiscal structure.

Considering the corporation income tax alone, the major growth-retarding effect probably arises from the direct economic effects on corporation behavior previously discussed. Insofar as the emphasis placed on debt as contrasted with equity financing makes corporate financial structures more vulnerable to market fluctuations, instability becomes more costly in terms of the growth objective; and insofar as the tax tends to generate unnecessary cost-increasing expenditures, the efficiency of corporate operation is reduced and, with it, the growth potential of the economy.

EFFECT ON COLLECTIVE CHOICE

The corporation income tax may be criticized on many grounds. But one of the most serious of its implications is often overlooked by students of fiscal theory. Precisely because of the uncertainty concern-

ing its real incidence and economic effects, the tax is convenient for the politicians to impose on the people. This is clearly evidenced by its continuing importance despite the absence of support from economists. Yet no one would propose that the real cost of public services is any cheaper because they are financed by the corporation income tax. The cost is concealed from the ultimate taxpayer, at least to some extent. If this is the case, the decision which must be made in balancing off the benefits of additional public service against the costs involved in the additional payment of taxes will not be based on a fully informed comparison of alternatives.

SPECIAL FEATURES OF CORPORATE INCOME TAXATION

The discussion to this point has been devoted to an examination of the tax and its effects considered in general terms. There are several other important special features of the tax, as currently administered in the United States, and these features exert economic effects of some interest. It will be useful to discuss these separately.

Loss Carry-over and Carry-back and Corporate Mergers

The absence of any effective averaging procedure was noted as one of the deficiencies in the current administration of the personal income tax. The need for some averaging under the corporation income tax is more urgent, since corporate income is much more fluctuating than individual income. The need for averaging differs in the two cases. With the individual income tax the need for averaging is not so much to allow in good years some offset of losses incurred during years of negative income, for individual incomes are rarely negative, but rather to allow for some adjustment in fluctuating positive incomes to take account of the differential treatment produced by the progressive rate structure. As has been said, the corporate tax is essentially proportional. Therefore, the need for averaging is not to offset the discriminatory treatment of fluctuating incomes at all. Rather the need for some averaging is based on the recognition that corporate profits are almost as likely to be negative as they are to be positive. If the tax were to be levied on positive profits alone without some adjustment for years of negative profits, the tax would have a major effect in reducing the amount of investment undertaken in risky and uncertain enterprises. The rate of innovation and introduction of new products would be drastically reduced.

This need has been, to some extent, recognized in the administration of the corporate tax. Included in the current (1960) tax law is a provision that allows some loss carry-over and carry-back. If a corporation reports a net operating loss (negative profit) during a particular year, the law as currently (1960) administered allows this loss to be deducted from taxable income in either one or both of the two preceding years. This carry-back provision allows the corporation to claim a refund on taxes paid during the earlier years. In addition to this carry-back provision, the corporation may carry over the loss as a deduction against income for any one or all of the five succeeding years after the year of loss. These provisions allow a corporation to average out income over a seven-year period in computing final tax liability.

With the exception of new corporations which experience losses from the start and, therefore, never earn income against which to offset the losses, these provisions do allow for substantially equivalent treatment for gains and losses. From the point of view of equity in the treatment of the separate corporation entities and the separate persons owning them, the provisions seem desirable.

The carry-over provisions have one important economic effect that seems undesirable. Insofar as the competitive economy is accepted as a norm or objective for public policy, any institution that tends to reduce the competitiveness of the over-all system must be viewed with suspicion; the carry-over provisions for losses make the merging of corporate structures quite profitable under many circumstances. For example, let us suppose that a relatively inefficient corporation has accumulated a huge operating loss carry-over. This corporation, given its current management, might never expect to have sufficient net taxable income within the next five years to offset the operating loss carry-over. On the other hand, suppose that, at the same time, an efficient and successful corporation is making a large current profit, all of which is fully taxable. It becomes advantageous for the successful corporation and the unsuccessful one to merge, retaining the original corporate structure of the unsuccessful corporation, in order to utilize to the full measure the accumulated operating losses. Each dollar of operating loss deduction "purchased" is worth fifty-two cents to the profitable corporation. It will not have to value the assets of the inefficient corporate shell very highly in order for a mutually advantageous merger to be effected, even if the actual lines of production are quite different.

For any particular merger of this sort there need be little, if any, reduction in the over-all competitiveness of the economy. But the cumulative effects of this provision in encouraging mergers will tend to produce an increasing concentration in the economy as a whole. In addition, there will be an increasing tendency toward the inclusion of wholly distinct productive processes under the same corporate shell, and this would seem to be less efficient than a higher degree of specialization.

This effect does not suggest that the loss carry-over should be removed as a feature of the tax. It would be a relatively simple matter to reduce the incentive for mergers provided by the carry-over provision. The most severe restriction would be that of disallowing any loss carry-over to a new corporate structure. But this seems overly severe and would prevent some genuinely economic mergers that are not really tax induced. Something should be worked out which will allow the mergers that will be genuinely economic to be carried out, but which will reduce the great tax advantage now provided for many mergers which are possibly uneconomic in real terms, and which, in any case, add to the over-all concentration of production in the American economy.

Accelerated Amortization

In computing net taxable income, a corporation is allowed a deduction for the estimated depreciation in the value of its capital assets. Since the manner in which the capital equipment is depreciated will affect the amount of taxable income reported, the Internal Revenue Service allows, under normal circumstances, certain rules to be followed in estimating depreciation. These are usually "conservative" rules, the most familiar of which is the straight-line method where a prorata share of the original cost of the capital asset is deductible in each year of the life of the asset.

In order to encourage business firms to accelerate investment in war and defense facilities during World War II, certain provisions were incorporated into the tax law which allowed "emergency" facilities to be depreciated at a considerably more rapid rate than ordinary rules would indicate. This provision was designed to encourage firms to undertake quasi-permanent investment in facilities that would be of service to the primary users over a certain limited period of time. Although some changes have been made in the postwar years, some provisions of this sort remain in the law. If an investment is undertaken which is designed to result ultimately in the production of a

new or a specialized defense item or some component thereof, the firm undertaking the investment is allowed to amortize the intitial cost over a period of five years. Since federal defense outlays amount to almost one tenth of the national product, this provision can be very important.

The accelerated amortization provision effectively allows the firm to reduce considerably its taxable profits over the initial five years of the life of the asset. If tax rates remain stable over time, the accelerated amortization will not modify the total amount of taxes paid by the corporation over any definite period of time. If the corporation finds that it has fully depreciated a facility during the first five years of its life, the tax liability during the remaining life of the asset will be correspondingly greater. But this total tax will be distributed differently over time in any case. The provision allows the corporation to secure some equivalent of the accumulated interest that would be earned on the taxes that would be paid during the first five years under ordinary depreciation rules. If no finite cutoff point is placed on the life of the corporation and it can be considered to reinvest continually in the expansion of facilities qualified to secure the advantages of this provision, there is an additional tax advantage over and above the amount of the accumulated interest.

This provision for accelerated depreciation seems almost certain to encourage firms to undertake a more rapid rate of expansion in qualified facilities than would otherwise take place. In one sense, this can be said to lead to a more rapid rate of economic growth. But whether or not economic growth should be promoted in this particular way seems an open question. If growth, as a desirable objective, is to be sought, a more appropriate means of encouraging investment may lie in monetary-fiscal policy designed to keep borrowing rates on funds low generally. If, however, investment in defense or defense-related facilities is considered to be differentially desirable, the provision for accelerated amortization may be appropriate.

Depletion Allowance

The most widely criticized provision in the current (1960) administration of the corporate income tax is that which allows firms in certain extractive industries to deduct an allowance for depletion before computing tax liability. The rationale of the depletion allowance is that ordinary depreciation charges against original cost of capital assets are not sufficient in extractive industries because of the fact that operation of the firm involves the depletion of a wasting asset

that is of unknown value. The allowance is held to be necessary to encourage an "adequate" amount of development and exploration.

The depletion allowances are computed as percentages of gross income of the firm. These rates range from a high of 27½ per cent for oil and gas companies to a low of 5 per cent for clay, gravel, oyster shells, sand, peat, and similar materials. An oil company, for example, may deduct 27½ per cent of its gross income before estimating its liability for the corporation income tax. This is, of course, over and above the deduction for ordinary depreciation for capital equipment. And the company may continue to take this allowance *each year.*

The economic effects of this allowance are easy to trace. Insofar as the allowance is excessive, and most students agree that it is, there will be a tendency for additional capital investment to move into this type of employment. Relative to the more heavily taxed industries, there will be overinvestment in the extractive industries. This relative overinvestment will bring the rate of return below that in other industries gross of tax. After an equilibrium has become established, the posttax return in the extractive industries may be no higher than the posttax return elsewhere in the economy. But, since some shifting of resources has been caused by the allowance, the over-all allocation of investment will be less "efficient" than it would be if the depletion allowance were to be reduced.

CONCLUSION

The tax on corporate income has been, and will continue to be, an important source of revenue for the federal government. This is true despite the fact that few arguments on either economic or ethical grounds can be advanced in its favor. The tax is grossly unfair as to the distribution of the burden among persons, and its economic effects, while unpredictable in part, are not consistent with the criteria of either efficiency or growth. The importance of the tax is explained by popularity with the politician. Since its true effects and incidence are somewhat obscure, the tax may be imposed somewhat more easily than can the personal income tax.

SUPPLEMENTARY READING

The most complete treatment of the corporation income tax is to be found in Richard Goode, *The Corporation Income Tax* (New York: John Wiley & Sons, Inc., 1951).

Chapter 25 OTHER FEDERAL REVENUE SOURCES

The income tax imposed on individuals and corporations is the primary revenue producer for the federal government. In comparison, the remaining revenue sources of the federal system are relatively unimportant although they produce significant amounts of total revenue in any absolute measurement. This chapter will discuss the more important of these revenues, both those that are included in the administrative budget and destined for general expenditure and those earmarked for expenditure out of the special trust fund accounts.

FEDERAL EXCISE TAXATION

Revenues from the various specific excise taxes provide the most important source of nonincome tax receipts for the federal government. Approximately $9.5 billion are estimated to be the fiscal 1961 yield of federal excise levies which produce revenues for the general fund. This total increases to about $12.5 billion if the additional excise tax revenues destined for the highway trust fund are included. In terms of rough-and-ready comparisons, net excise taxes at current (1960) rates yield over one third as much as the corporate income tax and about one fifth as much as the individual income tax.

Excise taxes are imposed by the federal government on a wide range of commodities and services. The most important revenue producers are the taxes on alcoholic beverages, which provide almost one third of total federal excise tax revenues. Those on tobacco provide about half as much as those on alcoholic beverages. Other commodities and services taxed include playing cards, appliances, jewelry, furs, luggage, telephone services, transportation, and admissions. There is no particular logic to the list of commodities and services

included in the group. Alcoholic beverages and tobacco are taxed because of the sumptuary aspects, and because they have proved to be very good revenue producers. Sumptuary considerations also explain, in part, such taxes as those on furs, cosmetics, and cabaret admissions. Other commodities are taxed because at some time in the past they were considered to represent "luxuries," that is, something which the "common people" could really do without.

Table 25–1 indicates the importance of the various broad groups of these levies. Taxes are imposed at both the manufacturers' and the retailers' level, the choice being dependent largely on convenience in administration.

One very important category of federal excise taxes, and one which will surely become more important, is that which includes the taxes imposed on highway users. For the most part, revenues from these taxes are destined for the highway trust fund for expenditure on the interstate system of highways which was finally authorized in 1956. These taxes do not rightly belong in the category of excise taxes, as such, since they take on certain characteristics of "prices" for the use of the highway network. These highway user taxes will be discussed, along with those levied by the states, in Chapter 38.

Federal excise taxation aimed at producing general fund revenues is important, and it may become even more important should the erosion of the individual and corporate income tax base, coupled with the need for continually rising federal expenditures, make further resort to excise taxation necessary. For some time, there has been a limited amount of discussion about the prospects for a general federal excise or sales tax to be imposed at the manufacturers' level. But widespread support for such a drastic change in the fiscal structure does not seem to be present, at least at this writing (1960).

For many reasons, continued federal government reliance on income taxation as its primary revenue source seems both probable and desirable. Excise taxation provides a more efficient and appropriate revenue source for state governments in the United States. If the federal political structure, that is, an effective division of political power between the central and the state governments, is to remain a viable form, with the states retaining some semblance of independent fiscal authority, a rough separation of tax or revenue sources is highly desirable.

As we shall see when we come to Chapter 31, states do rely quite heavily on excise taxation. For this reason, and since the analysis is identical regardless of the government imposing the tax, we shall

TABLE 25-1

Federal Excise Tax Receipts, Fiscal 1961*

Source	*Revenues, Fiscal 1961 (Est.) (In millions)*
Alcohol taxes	$ 3,243
Tobacco taxes	1,957
Taxes on documents, instruments, and playing cards	143
Manufacturers' excise taxes (gasoline, oil, tires, motor vehicles, appliances)	5,332
Retailers' excise taxes (jewelry, furs, cosmetics, luggage)	395
Miscellaneous excise taxes (telephone services, transportation, admissions)	1,487
Gross excise taxes	$12,557
Deduct	
Refund of receipts	84
Transfer to highway trust fund	2,950
Net excise taxes	$ 9,523

*Source: *Budget of the United States Government for Fiscal 1961*. Special Analysis B estimates included in the table are based on existing (1960) legislation.

not discuss here the economic effects of federal excise taxation. These will be discussed when we consider excise taxes at the state level.

One point should be noted. Relatively speaking, excise taxation is not important at the federal level in this country. Excise taxation, the most important form of indirect taxation, is a much more important part of the fiscal system of continental European countries and of most other countries of the world. This is in part because political power is more centralized. But it should be recognized that, quite apart from political structure, the United States and Great Britain, along with the British Dominions, rely more heavily on income taxation than do most other countries of the world. Therefore, an understanding of the effects of indirect taxation is equally important with an understanding of income taxation in the study of public finance.

ESTATE AND GIFT TAXES

Taxes imposed upon transfers of wealth, estate and gift taxes, produce for the federal government, at current (1960) rates, almost $1.5 billion annually. This revenue source is comparatively unimportant in the over-all fiscal system. The distinct features of these taxes are such that it seems worthwhile to discuss them in somewhat greater detail than they warrant when considered in terms of their

quantitative importance. Of the two taxes, the estate tax is more productive than the gift tax by some tenfold.

Federal Estate Tax

The base of the tax is the estate of the decedent at some estimated market value. An initial amount of $60,000 is wholly exempt from the tax. This exemption in itself insures that the tax affects a relatively small number of estates. Here, as with the income tax, however, continued inflation in prices and incomes insures that a greater and greater number of estates will be subjected to the tax over time, even though the real value of these estates may not have changed.

Marginal rates of tax on estates of more than $60,000 range from 3 per cent on the first $5,000 to 77 per cent on amounts in excess of $10 million. The tax is thus highly progressive. Credit is allowed against the estate taxes paid to state governments. This credit increases with the size of the estate to a maximum marginal rate of 16 per cent of the estate beyond $10,040,000. This credit provision against state taxes was originally introduced in order to encourage the states to enact estate tax legislation and to prevent interstate competition for the aged rich. With the credit it becomes highly advantageous for a state to impose a tax at least up to the limit of the federal credit since, if it does not, the taxpayer will have to pay the full amount of the federal tax anyway. Most state taxes are considerably in excess of the federal credit allowed.

The first distinctive feature to be noted about the federal estate tax is that it is levied on the *estate* of the decedent and not upon the *inheritance* of the recipient. Also, the rate progression is defined in terms of the gross estate. For example, assume that an estate is valued at $1 million, excluding exemptions and deductions, but including allowable credit against state taxes. The estate tax on this transfer will be $325,000 at current (1960) rates, regardless of whether or not it is received by one legatee or ten. An inheritance tax, by contrast, would be based on the amount of the transfer *received* by each legatee, and the gross tax on the $1 million estate would be larger if it were to be transferred to only one legatee than to ten, assuming that the rate structure were at all progressive.

The distinction between the estate tax and the inheritance tax introduces the second interesting feature of all taxes on transfers. By the nature of the transfer itself, two persons are involved in the determination of the tax liability. In discussing both the equity of the tax and the incidence and economic effects, the position and be-

havior of both parties to the transfer must be taken into account. The estate tax concentrates almost exclusively on the testator, the person who plans to bequeath the estate to others. Implicitly, this person is considered to be the one who finally pays the tax since the progression in the rate structure is determined by the size of the gross estate. Inheritance taxation, on the other hand, concentrates attention on the person who receives the bequest.

The incidence of the estate tax is not so evident as it might at first appear. The final burden of the tax would seem, at first glance, to rest with the recipient since he will receive less as a result of the tax. But if the right of disposition over an estate is considered to provide some satisfaction to the testator, the reduction of this right through estate taxation clearly reduces this satisfaction and he may be said to bear a portion of the final incidence. In any case, it is the behavior of the testator rather than the recipient that is likely to be modified as a result of the tax. The announcement or economic effects that do occur will be the result of his change in behavior.

These effects may take several forms. First of all, the testator will try through all legal means to evade the necessity of paying the tax through the planning of his estate in such a way that a portion of it will escape taxation. Various devices are possible through which this can, to a certain extent, be accomplished. These take the form of special trust fund devices, transfers through gifts before death, and many other similar devices in the domain of the professional estate planner. The actual economic effects must involve some change in the supply of labor services or in capital accumulation. The rich man, knowing that his estate will be heavily taxed, may be encouraged to retire earlier, to devote less energy to earning income, and to take longer vacations. The over-all importance of this sort of reaction does not seem likely to be large, although it is, of course, very difficult to determine statistically.

A second possible effect is some reduction in the over-all rate of saving and, through this, real capital formation. Individuals may not be deterred from earning incomes during their lifetimes by the knowledge that the estate tax will prevent their free disposition over all of the accumulated wealth, but they may be led to spend a somewhat greater proportion of earned income on current consumption than they would in the absence of the tax. Some effect of this nature seems almost certain to occur, but it is perhaps more than offset by the provision in the administration of the personal income tax that allows unrealized capital gains at time of death to escape the income tax

altogether. The person who is planning an estate for his heirs must, therefore, take both of these factors into account. He may escape all personal income tax liability by purchasing assets and making plans to pass the ownership of these assets along to his heirs at death. The heirs will be allowed to value these assets for capital gains purposes at the estimated market value at the time of transfer. No capital gains tax will ever be paid on the accretion in value. On the other hand, any plans to pass along an estate involve liability under the estate tax. The individual who escapes the income tax thus almost automatically incurs a greater estate tax liability. The net effects of the two provisions on the rate of real capital formation are not clear.

In a more practical way, the estate tax does have some effect on reducing the rate of real capital formation. The tax is sufficiently high on large estates to make necessary, in some cases, some breaking up of the ownership pattern in order to pay the tax. The assets of the estate must be placed on the market in order that sufficient funds to pay the tax can be secured. Insofar as this procedure disperses the ownership of the assets of the estate, some reduction in the concentration of wealth is accomplished, and, with this, perhaps some reduction in the rate of capital formation. Rather than subject the estate to the tax, the individual may choose, in such cases, to bequeath the estate, in whole or in part, to a charitable or educational foundation. Through such a bequest the estate effectively escapes the tax, and, in one sense, the tax is shifted to the general federal taxpayer by such action.

The equitable basis for the imposition of high taxes on either estates or inheritances is well established and commands widespread acceptance. Inherent in the political philosophy of the free society is the idea that individuals should, insofar as is possible, be guaranteed some equality of opportunity. Despite the many ambiguities that this concept introduces, the unlimited right of individual persons to pass along accumulated wealth to heirs would seem to violate this equality-of-opportunity objective, as this is understood by most people. The taxation of transfers of wealth provides one means through which the government can insure some greater equality of opportunity without, at the same time, causing major disincentive effects. In past discussions on this point, however, too much has perhaps been claimed for the tax on transfers of wealth on these grounds. If the individual's opportunities in life should depend solely on the pecuniary assets that he is able to inherit from his family, significantly greater equality might be achieved merely through a wise use of the estate and in-

heritance taxes. But it must be recognized that the opportunities of an individual depend equally on the environment in which he has been reared and the family to which he has been born. These advantages and disadvantages, as the case may be, could never be equalized by a tax on the transfer of wealth in any measurable sense. Equality of opportunity must remain a desirable social objective, but one which can scarcely be attained. Estate and inheritance taxes should be recognized as one means of moving toward an accomplishment of the objective, but their inherent limitations must be fully acknowledged.

The Federal Gift Tax

One economic effect of the estate tax seems certain. Its existence will encourage an increase in the number of *inter vivos* gifts. This effect is recognized and, in fact, stimulated by the gift tax, which involves a much lower rate structure.

The individual is allowed to transfer as gifts up to $3,000 per year per recipient without being subjected to any gift tax at all. This provision encourages the dispersion of gifts among persons and the spreading of these gifts over time. There is no limit on the number of persons to whom gifts can be made and no limit on the number of years over which this exemption applies. Gifts to individuals in excess of $3,000 each become cumulative to the giver and these become the tax base of the gift tax. The individual is allowed one $30,000 exemption during his lifetime, and all gifts beyond this become taxable. For example, the individual can give $30,000 to ten different individuals year after year without being subject to the gift tax. But suppose that he gives $30,000 each year to the same individual. Only $3,000 of this is wholly exempt, and, in addition, the individual would be allowed a specific exemption of $30,000 (which would be used up in the second year) before computing his tax. Once the exemptions are accounted for, the marginal rates on taxable transfers range from 2¼ per cent to a high of 57¾ per cent. These rates, coupled with the exemptions, are sufficiently below those of the estate tax to encourage transfers of wealth through gifts. Deliberate transfers through gifts in anticipation of death are not allowed, although this prohibition raises many problems of enforcement.

As with the estate tax, the donor is considered the party to the transfer that is subject to the tax. The recipient of the gift is not subjected to tax, even as ordinary income, since gifts are specifically exempted from the personal income tax. If the accretion conception

of income were thoroughly adopted in tax administration, both inheritances and gifts would be subject to full taxation as personal incomes. The absence of effective averaging provisions in the latter tax would, however, make this inclusion of inheritances and gifts somewhat unfair to recipients relative to other income receivers. If inheritances and gifts were included in the individual income tax base, there would be much less reason for levying special estate and gift taxes on transfers. In one sense, therefore, the present special taxes on estates and gifts represent a substitute for including these accretions of wealth in the individual income tax base.

EMPLOYMENT TAXES

If one looks at the receipts side of the regular executive or administrative budget for the federal government, employment taxes seem of trifling importance. The reason for this is that the revenues from federal employment taxes are almost exclusively earmarked for the federal Old Age and Survivors Trust Fund (Social Security.) Employment taxes produce revenues of some $12 billion per year, and this total is expected to increase rapidly over time. While the revenues from employment taxes now are about equal to those produced by federal excise taxes, taken in total, the yield of employment taxes seems almost certain to outdistance that of federal excise taxes by a substantial amount within a few years. Table 25-2 indicates the rapid increase in yield of employment taxes over the last decade, an increase which, relatively speaking, certainly exceeds that for any other tax in the whole of the federal fiscal system.

TABLE 25-2

Employment Tax Receipts, 1950-61

Year	*Receipts (In millions)*
1950	$ 2,881
1951	3,928
1952	4,563
1953	4,980
1954	5,423
1955	6,217
1956	7,294
1957	7,578
1958	8,641
1959	8,853
1960	11,057 (est.)
1961	12,667 (est.)

In the decade of the 1950's the yield from this tax has increased by fourfold. The reason for this increase is the expansion of the social security system to cover more and more employees and the rate increases which have been necessary to finance the increasing volume of outpayments made under the Social Security Act.

The Social Security System

The origin of the employment tax as a federal revenue source lies in the social security legislation introduced as a part of the "New Deal" program in the mid-1930's. From the start of the social security system there has been a continuing debate between two opposing philosophies or approaches to government provision of old-age security, a debate that has not been fully resolved and that is reflected, to some extent, in existing legislation.

The first view is that the system should be independent from the general federal revenue and expenditure budget and that this independent system, although governmentally organized, should be self-supporting. The dominance of this first view in the original legislation is indicated by the establishment of the Old Age and Survivors Trust Fund outside of the administrative budget and by the earmarking of employment tax revenues for, and the outpayment of benefits from, this trust fund account. Implicit in this conception of the system is the idea that a central objective of its operation should be financial or actuarial soundness. That is to say, sufficient funds should be collected from employment taxes during any one period to equal the discounted value of the benefit obligations in the future which are incurred by employment in that period. In this view, the system is supposed to be closely analogous to a private pension plan in which each worker contributes along with his employer toward the accumulation of a fund out of which his retirement income shall be drawn. Consistent with this first conception of the social security system is the norm that, during the early years of the operation of the plan, large reserves should be built up as a guarantee against future benefit obligations. The experience of the American system during its initial years reflects this view to the extent that funds collected from employment taxes exceeded benefit payments for more than twenty years, that is, until 1958. Since 1958, social security benefit payments have slightly exceeded employment tax receipts, which means, of course, some depletion in reserves. The trust fund account accumulated a reserve over the first twenty years of operation of more than $20 billion.

Employment taxes, although sufficient to accumulate some reserves until recent years, have not been sufficiently high to provide for full actuarial soundness of the system. If the current system were, in fact, a private pension plan, it would not be judged financially sound by competent auditors looking at its accounts. The fact that the system is not "sound" in this sense reflects the influence of a second, and sharply conflicting, view of the whole social insurance function. If the government is levying employment taxes sufficient to produce revenues in excess of current benefit payments, this leads to an accumulation in the trust fund account. A "budget surplus" is produced in this partial sector of the over-all fiscal system. But this surplus may or may not be consistent with broader fiscal policy considerations which must take into account the total cash payments received from the public and the total cash payments made to the public, including employment taxes and social security outpayments.

Taking this broader overview, it would seem appropriate, on the average, to limit employment taxes to an amount needed to finance current benefit payments, to put the plan on a pay-as-we-go basis, and to avoid any semblance of financial "soundness" which arises from a questionable analogy with private pension plans. If this approach were to be fully adopted, those individuals entering the system during its early years of operation would receive a considerable subsidy at the expense of individuals entering later. Since relatively few individuals will have become eligible recipients of benefits during the early years, employment tax rates during those years would be low. As the number of eligible recipients increases over time, current rates of tax must rise to keep pace. Those individuals subject to tax, say in 1965, must pay a somewhat larger total than the discounted value of their own expected benefits. If the rates were not changed except for these reasons, the system, even under this approach, would eventually settle down to a sort of long-run equilibrium. But if political considerations dictate that benefit payments may be raised to keep pace with inflation, the pay-as-we-go approach would probably result in pensioners always receiving some net subsidy from younger employed groups.

As suggested, the existing system embodies elements of both of the two approaches or philosophies to social insurance. A separate account does exist, and some reserves were accumulated during the first two decades of the system's operation. But tax rates were not raised sufficiently to insure full financial "soundness" in the actuarial sense; in addition, the schedule of benefit payments has been in-

creased several times. A part of the difficulty stems from the pressures that are brought to bear on the Congress to increase benefit payments and to keep tax rates from increasing. It is difficult to see how any real approach to genuine financial integrity of the system can be introduced so long as both the schedule of benefit payments and the level of tax rates are considered to be subject to political adjustments up and down. Genuine financial integrity would require a much more distinct separation of the system from ordinary political affairs, a separation which does not seem likely to be carried out. A single example will illustrate many of the issues here. One of the most persuasive arguments for the recent (1959) increase authorized in the benefit schedule was that inflation has occurred to reduce the real value of the dollar to such an extent that previously set benefit levels were no longer adequate to provide the essential minimum of social security to recipients. Taken alone, this argument has much force, and it seems eminently reasonable. But contrast this with the position of the pensioner under some privately organized plan. The inflation would have equally affected his real income position. But it would, of course, be folly for him to expect an upward adjustment in his pension which he financed with dollars of higher real value in past years.

Unless the social security system is to be made financially sound in some sense analogous to a private pension scheme, there is little argument for setting the whole plan apart from the more general federal budget. If, as currently seems in prospect, pensioners are to be subsidized at the expense of the taxed groups in the economy, there seems no especial reason why the employment tax should be preferred over the income tax or some other revenue source. It probably remains true, however, that even though not fully sound actuarially, the separation of the plan from the budget does exert some restraining influence on Congress as regards tampering capriciously with rates and benefit schedules. This probable restraint provides the only evident support for the continuation of the system as it is now organized.

Base and Rate Structure

The preceding brief discussion of the origin and dual nature of the social security system is useful as background to any understanding of the employment tax. The tax is imposed on wage and salary income to a maximum of $4,800. There are two separate taxes: one levied on the wage or salary earner, and the other levied

on the employer. The taxes are equal in rate. Currently (1960), the rate of tax is 3 per cent on both the employer and employee. For example, on a wage income of $1,000 per year, a tax of $30 will be levied on the employee and a like amount levied on the employer. This rate is scheduled to increase over time to a maximum of 4¼ per cent after 1974, although unscheduled rate changes appear certain to occur before that time. These scheduled increases are necessary in order to keep the system on a pay-as-we-go basis under the increasing benefit payments which will certainly be required over the next two decades.

The employee portion of the tax is deducted directly by employers from the wages and salaries of the employees. Except for specific cases, all employers are required to report wages earned and to pay the appropriate tax. The coverage of the tax is widespread. Certain groups, such as state and local employees, railroad employees covered by a special plan, and civil service employees similarly covered, may be exempted from coverage. But, by and large, most members of the laboring classes are covered by the Social Security Act, and a means is even provided whereby the self-employed person may enter the system by paying both the employee and the employer portion of the tax.

Incidence and Economic Effects

The wide coverage of the tax suggests that there is no easy way for the employee to escape his portion of the tax. Only by shifting his activity to some form in which he does not earn income can the individual escape the tax since there are few areas of employment not subjected to the tax. For all practical purposes, therefore, the final incidence of the employee portion of employment tax rests squarely where the tax is levied in the first place, on the employee.

The employer portion of the tax is not so simple to analyze. The tax is levied on the employer, but this is no guarantee that employers cannot escape the tax by changing their behavior. They may shift the tax. Since the tax is imposed on wage income paid out, to the employer the tax represents a proportionate increase in labor cost of production. Although it is an important part, labor cost is not the only cost incurred by the employer. Labor must cooperate with capital in production, and the tax does not affect the cost of capital in any direct way. Since labor and capital are, at least to some extent, substitutes in production, the employer will be encouraged to utilize relatively more capital and relatively less labor as a result of the tax.

This reduction in the demand for labor will tend to lower wage rates, since supply of labor will not have changed as a result of the tax itself. Through this lowered wage level, the employer portion of the tax is effectively shifted to the workers. It may be concluded, therefore, that both the employee and the employer shares of the employment tax are finally paid by the wage and salary workers.

Implicit in this analysis of the incidence of the employment tax is the assumption that the supply of labor will not be substantially modified as a result of the tax. This seems the most reasonable assumption that may be made. The tax does reduce the effective wage of the salaried employee in comparison with the situation in which the tax does not exist. To some extent, expectation of being able to receive future benefit payments under the scheme may tend to offset the disincentive effects created by the tax, but it seems useful to keep the effects of these benefit payments quite separate from those of the tax itself. But what are these incentive effects of the tax itself?

Will the wage earner work more or less as a result of the levy of a proportionate tax on his income? No clear answers to this question are provided by orthodox economic analysis. The worker will be tempted to work less since an additional hour's work is less rewarding than in the comparative case. On the other hand, he will be tempted to work more in order to earn a higher income since his income after tax will be lower than before the imposition of the tax. The final effect on his behavior will be the resultant of these two offsetting forces. The best assumption seems to be, therefore, that the supply of labor is not substantially affected by the tax. This assumption is reinforced when it is recognized that institutional conditions prevent many workers from having a great deal of liberty to modify working hours at will in response to tax changes.

CONCLUSIONS

The primary source of revenue for the federal government is the income tax levied on individuals and corporations. By comparison with these taxes, other federal revenue sources are relatively unimportant. In absolute terms, however, the remaining sources of revenue are quite large. Federal excise taxes yield more than $12 billion of revenue annually. These taxes are levied on various products and services for different reasons, although the most important taxes are those levied on alcoholic beverages, tobacco, and gasoline. These taxes were not discussed in detail in this chapter. Estate and gift taxes do not yield large amounts of revenue. Taxes on transfers of

wealth present problems of analysis as well as equity which are quite distinct from those on income. The fundamental ethical basis for the taxation of transfers lies in the liberal ideal of equality of opportunity. Estate or inheritance taxation allows this objective to be more closely approximated without overly sharp conflict with the alternative objective of rapid economic growth and maximum income.

Employment taxes have been increasing in relative importance in the federal revenue structure. These taxes are earmarked to finance the social security benefit payments; they are not included in the ordinary estimates for federal budgetary receipts. These taxes may be expected to continue to provide a rapidly increasing yield as the system of social insurance reaches maturity over the next two decades. The incidence of both the employee and the employer portion of this tax seems to rest largely on the wage earner. The precise effects of this tax on the supply of labor are not clear, but no substantial change seems to take place.

Chapter 26 INFLATION AS A TAX

In this chapter the discussion will be rather sharply changed from that in the preceding chapters of this part of the book. Heretofore we have examined long-established tax institutions that have been recognized as such by the public. We now propose to examine another long-established institution which can best be considered from the taxation approach, but which has rarely been treated as a means of taxation as such. Inflation can be studied from many aspects, but, for the purposes of public finance, it seems appropriate that inflation be considered as a method of taxation. The phenomenon stems from the power of governments to create money with which they may finance public expenditures. In the American economy, only the federal government possesses this power. Therefore, it seems appropriate that taxation through inflation be included in this part of the book.

A BIT OF CONJECTURAL HISTORY

Throughout much of recorded history, governments have been able to finance a portion of their public expenditures through some deliberate depreciation of the monetary unit. Early in the development of the organized or market economy, the "prince" secured control over the currency unit, the "coin of the realm." This control was essential to the orderly working of any market economy, since the absence of some accepted circulating medium and some authority to determine its quality would have resulted in an extremely inefficient quasi-barter exchange system. The medieval "prince" was given the right to coin currency. This right was secured before an adequately functioning tax system was established. Attempts to finance public services, primarily the maintenance of a royal court, were continually

frustrated since the people would not pay taxes without protest and revolt. The "prince" soon came to realize that his right to coin money provided him with an opportunity to finance "public" services without the knowledge of his subjects. He could tax them without their being aware of it. He could do this by clipping off the edges of all coins as they passed through the royal treasury. In this way he could accumulate a surplus of precious metal which he could then melt down and reissue in the form of new coins. With these newly issued coins he could pay for the goods and services desired by the "government." This deliberate increase in the supply of circulating monetary units without, at the same time, any corresponding increase in the supply of real goods and services, resulted in an increase in the level of product prices, that is, in inflation.

In this very simple conjectural model, which does in its fundamentals describe what went on during certain historical periods, the taxation implicit in this sort of inflationary process is clear. The "prince" depreciated the currency as a means of financing "public" services; this was an alternative to the more conventional methods of taxation. The tax was popular with the "prince" because he could conceal its effects, at least in part, from the citizens.

Since the process produced real goods and services for the "prince," someone must have suffered a real income reduction in the operation. Some individuals or groups must have borne the final incidence of the tax. Who really paid for the expanded "public" services enjoyed by the "prince" and his court? Those individuals and groups who held assets in the form of cash or in the form of claims to fixed amounts of cash were the final bearers of the tax. Since the value of the monetary unit was reduced, the real goods and services that were commanded by a given stock of cash were reduced. The inflation had effects equivalent to a special tax imposed on all holders of cash and claims to cash.

THE MODERN VERSION

Minting arose as a means of preventing the medieval prince from devaluing the currency. But history also teaches that governments of modern national states finance expenditures in the same way, although the actual practice is much more sophisticated than that adopted earlier. Unless a commodity standard of money is in existence, and there are no such standards at the present time, national governments possess the power to regulate the value of the monetary unit through their control over the supply of money. This power of

controlling the supply of money gives governmental authorities an almost irresistible temptation and opportunity to finance public services through currency depreciation, that is, through inflation, rather than through orthodox means of taxation. The great advantages of nationally managed currency systems in the modern world are such that any return to genuine commodity standards seems out of the question.[1]

Limits to which modern national governments may employ this form of taxation may be imposed by the structure of international payments. If a single country inflates its own currency at a faster rate than its trading partners, it will begin to incur balance-of-payments deficits. These deficits will mean that the country will either lose gold or foreign exchange reserves if exchange rates are fixed, or find the exchange rate moving against its own currency if these rates are floating. Even with balance-of-payment deficits, however, modern national governments are likely to resort to direct controls to stop the domestic inflation that is the fundamental cause of the difficulty. The limits that international trade places on taxation through inflation are, therefore, more apparent than real.

Perhaps a brief examination of the way in which the United States financed World War II will provide a good example of the manner in which modern national governments impose taxation through inflation. At the beginning of the rearmament period, public expenditure needs rose sharply and drastically above prewar levels. Congress responded by significantly increasing tax rates and by imposing many new taxes. But governments are almost never able and willing to finance wars fully through current taxation of the orthodox sort. The increased tax revenues still left large deficits in the federal budget that had to be financed in some fashion. Every attempt was made, quite properly, to finance these deficits through borrowing from the public, that is, through the sale of government securities to the nonbanking public. Insofar as private people purchased these securities with money that would have otherwise entered the spendings stream, the net effect of borrowing was, at least in the initial period, similar to taxation except that the purchase was voluntary. It soon

[1]Prior to World War I, the important trading nations of the world were tied closely together through adherence to the international gold standard. Under this standard, the power of a single national government to finance public services through inflationary means was strictly limited. If domestic inflation was created by the issue of excessive amounts of domestic currency, exports of the country would decrease and imports would increase. Gold would flow out of the country, and some internal deflationary action would have to be taken.

became evident, however, that increased tax revenues plus funds borrowed from the public were not going to be sufficient to finance the deficits created by wartime expenditure needs. Recognizing this, the government resorted to the banking system and its delegated authority to create purchasing power. The government "sold" securities to the Federal Reserve banks in exchange for deposit accounts out of which public expenditures could be made. This "sale" of securities, coupled with the government's spending of the purchasing power set up in these deposit accounts, served to increase sharply the reserves of commercial banks. These excess reserves allowed the commercial banks to purchase additional government securities to some multiple of the amount initially purchased by the Federal Reserve banks. All in all, the process was almost fully equivalent to a simple operation of the printing presses in expanding the effective money supply. Money in circulation (demand deposits plus currency) rose by a multiple of four over the war period.

All required public outlays were, of course, financed. In one sense, the resort to disguised money creation through borrowing from the banking system provided a residual source for federal financing. In times of national emergency, such residual opportunities may seem extremely important, especially when the government cannot secure sufficient public support for a level of orthodox taxation adequate for urgent needs. But the important point is that this residual method of financing also constitutes taxation, except in those cases to be discussed next.

There were some unemployed resources and some unutilized productive capacity in the American economy at the beginning of World War II. To the extent that this existed, the additional purchasing power generated by the money-creation process did not exert any inflationary pressure. (This important case will be discussed in a later section.) Once the resources and the capacity of the economy were fully utilized, however, any additional purchasing power could have only one effect. Pressure was placed on the level of prices, and inflation in the price level was the expected result. During the actual war period, direct controls were placed over prices and wages in an attempt to prevent this expected inflation, but such controls are never very efficient in accomplishing this purpose. Experience has shown that repressed inflation is scarcely to be preferred over open inflation.

In any case, inflation did occur, both in the war period and in that immediately following. This inflation represented a tax on all

holders of cash and upon all holders of claims to fixed amounts of cash (for example, government bond holders). These groups were effectively taxed to finance the deficits created by the extraordinary wartime expenditures. These groups became the residual taxpayers who paid for that part of the war effort over and above that paid by more orthodox taxpayers. During periods such as this, this form of inflation through taxation becomes very important in the revenue system.

INFLATION AND POLITICAL STABILITY

During periods of normal economic activity, deliberate resort to the inflation of the national currency as a means of financing public expenditures seems to represent a sign of political weakness. If resources are fully employed, currency inflation can only lead to an increase in the level of prices, which imposes a genuine "tax" on the holders of cash and claims. And this tax seems especially inequitable because it is concealed.

It is an unfortunate fact, however, that, in many of the less-developed countries of the world, resort to currency inflation is a normal occurrence. Governments are not strong enough to withstand the joint pressures for expanded public services and lower orthodox taxes. As a result, continuous government deficits, financed from the creation of new money, become the order of the day. The holders of cash and claims to cash are continually subjected to a major burden of tax. Chronic inflation is characteristic of many of the countries of the world.

CURRENCY INFLATION WITHOUT TAXATION

In discussing the taxation that is implicit in a policy of financing government deficits through currency creation rather than orthodox taxation, it was necessary at several spots to make the underlying assumptions of the analysis explicit. It will be useful here to discuss briefly the one case in which currency creation is a proper means of financing government expenditures.

If widespread unemployment of economic resources and much unutilized productive capacity exist, roughly the situation during the Great Depression in the United States, the government can and should adopt a fiscal policy which involves the financing of all or a portion of government expenditures through outright money creation rather than taxation. The reason for this is that the increase in

the money supply will, in such instances, serve largely to increase real income and employment and will not be used to bid up prices of existing output. No price inflation need occur at all in such periods; therefore, no taxation is involved in currency creation.

The situation in deep depressions presents governments with rare opportunities to finance public expenditures without any real cost being imposed on the people. Literally, the government can, in such situations, secure resources without cost to anyone by simply printing money. It follows, therefore, that this is the appropriate policy to be followed.

Professor Abba Lerner has noted that the only purpose of taxation is to prevent inflation. This is, in a limited sense, true. If no increase in the price level is threatened as a result of currency creation, there is no real cost of public expenditures and, therefore, no need for taxation in the ordinary sense. Taxation has as its primary purpose the financing of the real cost of government service, or, in other words, of spreading the real costs of these services equitably throughout the population. It is clear that currency creation will exert an inflationary pressure except in very deep depressions. Normally, bottlenecks and rigidities in the economy will cause prices to rise as a result of money issue, even if some resources are unemployed. In such periods, this taxation aspect of the problem should be recognized explicitly in the fiscal policy adopted.[2]

INFLATION AND ECONOMIC GROWTH

The two extreme or polar cases have been noted. If resources are fully employed, substantial currency creation can only lead to inflation, which amounts to a very severe and inequitable tax on the holders of cash and claims. If, on the other hand, significant unemployment is present, and no serious bottlenecks exist, currency crea-

[2]Strictly speaking, the conclusions in this and other parts of this chapter are correct only if additional assumptions are made explicit. In a growing economy, the supply of money must be expanded in order to maintain a constant level of final product prices. This necessity for increased quantities of money allows the government to operate, if it desires, at a slight budget deficit. But who pays for the public services that are not tax financed? Surely, in the fully employed economy, some real cost must be present. The real taxpayers in this case, as in that of inflation, are the holders of cash and claims to cash. They are taxed in a relative sense because, if the budget should be balanced (that is to say, if the additional public services should not be provided), the price level would fall and the purchasing power of cash would be increased.

It is clear that the amount of additional currency that might be introduced as a means of maintaining monetary stability in a growing economy is quite limited. For purposes of general discussion, therefore, the qualifications made in this note need not affect substantially the conclusions reached in the text.

tion may result in an increase in real income and employment without any increase in the level of prices. In the first of these two situations, deliberate resort to inflationary financing of government expenditures is a sure sign of political weakness and should be avoided if possible. In the second case, currency creation should be undertaken as a means of financing public services since these can be obtained in this way without cost to anyone in the group.

The more difficult problems arise in the intermediate cases which seem, somewhat unfortunately, to characterize the modern economy. Few economists expect that a deep and severe depression on the model of that of the 1930's will occur in the foreseeable future. But few economists agree that the normal rate of employment in the decade of the 1960's will be high enough to insure the absolute maximum rate of growth in real income. A discussion has been raging on whether or not deliberate resort to inflation might not be a desirable means of stimulating a higher rate of economic growth. Inflation in the United States, if it occurs, must be considered to result as a deliberate choice. It will be useful here to discuss the issues involved in making this choice. These issues involve an examination of the economic effects of inflation.

ECONOMIC EFFECTS OF INFLATION

It is useful to trace the economic effects of inflation in the same way that these have been traced for other taxes. What will be the effect of the inflation on individual behavior patterns? What action will be taken to avoid the tax? Upon whom does the final incidence of the tax fall, even after full account is taken for the possible shifting?

The first point to be noted is that inflation as an announced policy will have different effects from inflation that is unexpected. If inflation is explicitly adopted as a policy, thus making it fully analogous with orthodox taxation, individuals and groups can take whatever action is available to escape the tax, to shift it to others. On the other hand, if inflation is unexpected there can be no announcement effect. The incidence must rest on those "caught," so to speak, when the action takes place.

Let us first consider inflation of the unexpected sort. Let us assume that the government finds expenditure needs running in advance of tax revenues and that it finances these through resort to the modern version of the printing press. Private people do not expect inflation to occur. As the newly created purchasing power enters

the economy, some initial increase in real income and employment may take place, at least if the government spending is concentrated on those activities that are depressed. However, it seems clear that prices of both final products and productive services will rise along with the increase in aggregate demand. But prices will not rise uniformly. Some prices will rise rapidly, others more slowly, and others not at all in the short run. This unevenness in the pattern of price increases in inflationary periods produces a significant redistribution of real income in the society. Those individuals in favorable positions to take advantage of rapid price rises for their products and services will be able to increase their own real income positions at the expense of those marketing products and services characterized by more slowly rising prices. Debtors, those who are obligated to pay others fixed monetary sums, will find their real wealth position improved. Creditors, those holding the fixed claims on debtors, will have their real wealth reduced by inflation. Individuals on relatively fixed income contracts will not be able to keep up with the pace of inflation; individuals whose wage and salary scale moves up rapidly will be able to secure net income gains from the process.

These and many other similar redistribution effects of the inflation are important and should not be overlooked in any complete analysis. But redistribution involves net gains to one group and net losses to another. The real incidence of the tax implicit in inflation is quite apart from this sort of redistribution itself. The government secures a greater command over real resources as a result of the currency creation. And the whole social group must suffer a real income loss, or "burden," representing the sacrifice of those resources which the government acquires. This effect exists over and above all considerations of real income and wealth redistribution within the group itself.

The final incidence of the unexpected inflation can be said to rest with those who hold cash and claims to cash at the time the inflation occurs. Since the inflation is unexpected, these individuals will have no time to change their behavior with a view toward escaping the tax. They will have no time to shift the tax to other members of the community.

If an inflationary fiscal policy continues for any length of time, the announcement effects will begin to be important. Governments will almost never announce inflation as a deliberate goal of policy, but repeated resort to the printing press, or its modern equivalent, insures that these announcement effects will take place. Over the long

run, the results will be almost equivalent to a policy of announced inflation.

When individuals expect inflation to occur, they will take action to prevent being subjected to the tax if possible. They will attempt to convert their asset holdings from money form into goods. If we recognize that various assets represent varying degrees of moneyness (liquidity), we can say that individuals, expecting inflation, will try to shift as far away from money as is possible. They will purchase those assets and claims that represent real values, the money values of which are expected to rise as the inflation proceeds. Prices of things such as land, real property of all sorts, and equity shares of debtor firms will tend to rise. The value of claims to fixed amounts of money, for example, bonds, will fall sharply as the demand falls off and the supply increases. Yield rates on such claims will rise. Wage contracts will not be renewed in the absence of escalator clauses adjusting wage payments to increases in the price level. The demand for money cash will be reduced, and the interest rate on money will rise to include an adjustment for the expected rate of inflation. The velocity of circulation of money will rise rapidly.

In this situation, after the adjustment to an equilibrium path of inflation that is fully anticipated, the tax will be paid by those who must use money. This may be illustrated by reference to the case of complete avoidance of the tax. If, for example, individuals could dispense with the use of money altogether, the government could not collect this tax. The case is exactly the same as the tax on liquor which individuals may completely escape by consuming a zero amount. If individuals were willing, in fact, to "consume" a zero amount of monetary services, the government could not impose any tax by inflating the currency. No one would be willing to give up real resources for money in such circumstances.

It is clear that the modern economy requires money for its operation. Transactions must be made, goods and services must be exchanged, through a medium of money. Therefore, despite all attempts to escape the tax, despite the undesirability of cash as an asset during periods of expected inflation, cash will still be used. This will allow the government to continue to collect the tax through currency creation, and this taxation must be borne by those members of the group who must, by the nature of their economic activity, hold cash over time. The cash that is utilized must be held at all times by someone in the group, and these holders of cash will be subjected to the tax in proportion to the amounts held and the length of time held.

Claims to fixed amounts of cash will completely disappear in the fully adjusted inflationary economy.

The expected or anticipated inflation will involve some wastage of resources in the use of substitutes for cash. Payments will be made more quickly, and various costly devices of barter will be arranged. These are costly in terms of economic resources. These may be said to constitute the excess burden of the tax.

At the end of the preceding section, the relationship between the inflation process and the rate of economic growth was mentioned. Some currency creation can, in the modern economy, stimulate short-run growth. This point seems agreed by most students of the problem. But currency creation will also cause prices to rise—inflation. The question posed was the following: Would it be good public policy to choose deliberately to allow inflation to take place in order to secure the benefits of an accelerated rate of short-run growth? This question is implicitly answered in the effects just traced out. If this inflationary policy is continued over a long period, individuals will fully anticipate the inflation that occurs. They will fully adjust their behavior to the expected rate of increase in the price level. Any boost that the increase in aggregate demand may exert toward stimulating fuller employment of resources and accelerated growth in the short run will not be possible unless the expected rate of inflation is increased. In other words, the growth-stimulating effects of inflation can occur *only if the inflation is unexpected.* If a steady rate of inflation continues, this rate will be expected. Hence, any continuous stimulant to economic growth through a policy of inflation implies a continuously increasing rate of inflation. Surely this is not a desired alternative under any circumstances. A steady rate of inflation can be maintained by appropriate government policy, but this will be advantageous only insofar as it provides the government with tax revenues. It will be of no use in securing a more rapid rate of growth.

There is an important difference between the tax implicit in unanticipated inflation and that in fully anticipated inflation. In the former, the tax is concealed. Individuals are subjected to a burden of tax without knowing it and without having had time to adjust to it. This method of taxation seems contrary to the whole ethos of democratic society. On the other hand, if the inflation is fully expected, the tax here is no different from any other indirect tax. There is no inherent reason why the holders of cash should not be subjected to a tax, any more than the consumers of beer, meat, or playing cards.

But the point to be emphasized is that the only possible advantage of a long-run steady inflation is that secured from the tax proceeds.

CONCLUSION

Throughout the ages, governments have resorted to the creation of currency in some form to finance a portion of their expenditures. Modern governments are no different in this respect. Government "borrowing" from the banking system is, in many cases, equivalent in effect to printing money. Insofar as money creation does not cause inflation, there can be no real objection to this method of financing expenditures. In such cases, perhaps characteristic only of very deep depressions, the government can secure resources without imposing any real cost on individuals. In more normal circumstances, any creation of money will drive prices upward, which will amount to a reduction in the real incomes of some individuals and groups in the economy. The effects are similar to those of a tax imposed directly on the holders of cash and claims to cash. A full understanding of inflation requires that the process be treated explicitly as a means of taxation.

It is necessary to distinguish carefully between inflation that is unanticipated and inflation that is fully expected. The former type of inflation can perhaps stimulate some short-run acceleration of economic growth, but it is an extremely inequitable form of taxation. The second type of inflation can have no effect on stimulating growth at all, but it is no different as a tax from any other indirect tax.

Part VI

THE NATIONAL DEBT

Any study of the public finances in the modern world would be seriously incomplete without some specific discussion of the public debt. It has already been noted that the annual interest charge on the federal debt is second only to defense as an expenditure item in the federal budget. And debt management remains as one of the most important fiscal tasks of the national government.

Before the more practical problems of debt management can be adequately discussed, some of the fundamental principles of public debt must be considered. Chapter 27 is devoted to a broad discussion of such principles. It is necessary to note, however, that the "theory" of public debt presented in Chapter 27 is perhaps the most controversial material in this textbook. The approach taken is based on that developed in greater detail in my recent book, *Public Principles of Public Debt* (Richard D. Irwin, Inc., 1958), and this approach has not commanded widespread acceptance in recent years. For this reason, some of the points are developed by way of contrast and comparision with more widely accepted views.

Chapter 28 describes the existing national debt in terms of its most important characteristics. Chapter 29 is devoted exclusively to the current problems of debt management facing the Treasury Department.

Chapter 27 THE PRINCIPLES OF PUBLIC DEBT

TAXATION VERSUS BORROWING

Taxation can be considered as the normal way in which a government secures the revenues needed to finance public services. If we look on the fiscal process as an "exchange," taxes are the "prices" that individuals pay for the benefits of public activity. Individuals, acting through the political processes, subject themselves to a reduction in real income of one kind (private goods and services) in order to be able to secure real income of another kind (public goods and services). The fact that taxation inherently implies coercion or compulsion does not modify this basic nature of the fiscal process. Taxation may assume various forms; as we have shown in Chapter 26, inflation is essentially one means of taxation. The fundamental characteristic of taxation is the compulsory reduction in real income or wealth imposed on the individual in order that the government may finance the purchase of resources and services which, in turn, yield some addition to individual real income or wealth in terms of public service benefits.

For governments, as for private individuals, borrowing is essentially an alternative means of raising revenues. Borrowing, that is, the creation of public debt, is a means through which governments may finance public services without reducing the real wealth of private individuals. Insofar as resources are used up in the provision of public services, some reduction in the resources available for private disposition must, of course, take place when the public sector of the economy expands. But the essence of the borrowing process, as opposed to taxation, is that the government secures the revenues to finance its purchases on a voluntary exchange basis. Private individuals *purchase* government securities, not as the result of compul-

sion, or even in the sense of exchanging current income for public service benefits, but *in exchange* for a government promise or obligation to provide them with future income. Thus, we see that government borrowing and taxation are contrasting methods of financing public services. In the one case, taxation, individual real wealth is currently reduced in "exchange" for goods and services directly provided by government. In the other case, borrowing, individuals give up no real wealth to secure the benefits of public services; they secure these through the government's contraction of an obligation to pay some income in future time periods to certain creditors, whether these be citizens or foreigners.

THE BURDEN OF PUBLIC DEBT

Viewed in terms of the contrast with taxation, it is clear that the financing of public services through the issue of debt instruments, securities, does not impose any real burden on citizens at the time that the public expenditure is undertaken. This is true despite the fact that the resources available for private disposition are fewer than before. Real resources are, of course, shifted from the private to the public sector by the combined debt issue–government spending operation. But this transfer involves no real sacrifice or burden to individuals because those giving up current purchasing power, those who purchase government bonds, do so in voluntary exchange for debt instruments which embody some obligation on the part of government to make a return income payment in the future.

From this conception, it follows that the real burden of debt must rest with taxpayers during the future periods when the previously issued debt requires servicing and amortization. As contrasted with taxation, which must impose a current real burden on individuals, debt creation provides one way of financing public services without current cost. It provides a means whereby taxpayers in any given period may *shift or postpone* the payment for public services to the shoulders of taxpayers in future periods. "Future generations" may be exploited through the choice of debt issue to finance public services.

This elementary analysis concludes that the real burden of the public debt, and by real burden is meant the sacrifice of individual utility, must be shouldered by those individuals and groups who must pay the taxes necessary to service and to amortize previously issued debt. The logic of this analysis is irrefutable within the limits of the

model discussed, and this seems to be the only fully appropriate model for the purpose at hand. Nevertheless, this conclusion has not been widely accepted in recent years. The claim has repeatedly been made to the effect that the burden of debt cannot be postponed or shifted to future generations. Although this argument seems fundamentally fallacious, it now commands such widespread acceptance that careful consideration is indicated. The argument is based on the idea that it is impossible to transfer a real cost to future periods when the resources providing the public services are used up during the initial period of debt issue. The steel, copper, and oil, for instance, that were actually used up in producing war materials in 1944 were used up in 1944, not in some later year. The real cost, the sacrificed alternatives, of these resources could only have been shouldered by those individuals who lived during 1944, who were forced to sacrifice current consumption of such materials during that time. This argument seems initially to be sound until it is recalled that, insofar as genuine debt was used as a means of financing these purchases, private individuals were not "forced" to sacrifice consumption or investment opportunities at all. They gave up purchasing power voluntarily in exchange for the government's promise to pay to them a somewhat larger income in the future. When this point is accepted, debt issue cannot be claimed to impose a real cost on anyone during the period of resource use, despite the reduction in the amount of resources left available for private disposition.

THE TRANSFER ARGUMENT

How can the whole group be subjected to a net burden of public debt in periods after that in which resources are actually used up for public purposes? One reason for a continued adherence to an essentially fallacious view is the concentration on the *transfer* aspects of debt service operations. If the government sells a bond to an individual living within its borders, the payment of interest on this bond represents a transfer of purchasing power or income from the taxpayer to the bondholders, and in many cases this person may be one and the same. In the transfer process, the real income of the taxpayer is reduced; the real income of the bondholder is increased. But how can the whole group, taken in the aggregate, be said to shoulder any burden, any net reduction in individual utility as a result of the servicing of previously issued debt? This is the most persuasive part of the widely accepted argument concerning the location of the debt

burden, and the effective refutation of this part requires a careful examination of the underlying logical or methodological assumptions.

We must return to the period of debt issue itself and ask the question: What would happen if the public debt were not to be issued? The individual who now purchases the government bond would purchase instead a private security, some other income-earning asset, or he would spend the funds in current consumption. In either case, the discounted value of the alternative purchase would be approximately equal to that of the government bond. There would be only a slight and insignificant differential between the purchase of the government bond and its substitutes. Now let us consider the position of this individual in later periods, assuming that he did not purchase the government bond. The analysis is simpler if we assume that instead of the government bond, the individual purchases a private bond, although this is not a necessary assumption. The private security will provide an interest income approximately equal to what the individual could have earned on the government bond. Therefore, we conclude that, differentially speaking, he is no better off without the government bond, without public debt having been issued, than he would be with the public debt. The existence of the public debt, as such, does not provide the bondholder with any differential benefit or burden.

The situation of the taxpayer in these later periods is wholly different. With the public debt in existence, he is subjected to a coercive levy imposed in order to finance the interest payments on the debt. *This is the real burden of the public debt*, since the taxpayer in this situation is the only person who must suffer a net reduction in utility due to the past expenditure having been undertaken. If the expenditure had not been carried out in previous periods, no debt obligation would have been created by government. The taxpayer, as such, would have been under no charge to service a public debt.

If this analysis is accepted, it is clear that it is erroneous to look upon the payment of interest on an internal or domestic public debt as a "transfer" in any real sense. Bondholders receive the interest as a part of a contract; taxpayers lose purchasing power through the imposition of a compulsory levy. To call these two effects canceling overlooks the fundamental difference between taxation and borrowing as means of financing public expenditure.

If the debt-financed expenditure turns out to be productive, the taxpayer in later periods may, of course, be better off, even with the

necessity of paying the interest charge, than he would be without the debt having been issued. But this is irrelevant to the problem of locating the debt burden. The problem is precisely that of locating the individual or group of individuals who does "pay for" the benefits secured from the public outlay, quite independently of whether or not the outlay itself is productive or unproductive. Debt issue tends to shift this burden of payment onto the taxpayer in periods subsequent to the debt issue-expenditure operation. Taxation, by contrast, places the burden on the individuals living during the period when the expenditure is undertaken. This is the basic difference between the two methods of financing public expenditure, and the failure to recognize this point can only lead to confusion.

THE ANALOGY WITH PRIVATE DEBT

One of the points that is often made in the modern discussions of the public debt is that it is fallacious to draw any analogy between the debts of governments and the debts of individuals, between public and private debt. The emphasis on this point stems from an acceptance of the argument that has been critically examined previously. In many particular respects, public debt must be different from private debt and any analogy between the two must be used with great care, as is the case with all such analogies. But this does not suggest that the underlying similarity between the individual and the public economy as regards debt issue can be overlooked. In the most essential respects, debt issue for the individual and debt issue for the state are analogous.

In each instance, borrowing (debt issue) constitutes an alternative to the more normally accepted means of raising revenues. Borrowing takes the place of earning additional income for the individual and of "earning" additional revenues through taxation for governments. Borrowing in either case is a means of securing additional current purchasing power without undergoing supplementary current cost. The costs of expenditures currently undertaken are effectively shifted to future time periods. In such future periods, creditors hold a primary claim against the revenue or income of either the individual or the government.

It may, of course, be fully rational for either the individual or the government to borrow instead of raising funds in a more normal way. As will be seen when this point is discussed, the desirability of borrowing depends on the expected productivity of the expenditure and time pattern of the expected yield. Here it is noted

only that there is no basic difference between the individual and the government economy as regards the essential aspects of debt versus current financing of expenditure.

EXTERNAL AND INTERNAL PUBLIC DEBT

Still another result of accepting what has been labeled here the fallacious conception of public debt has been the sharp distinction made between an internal and an external or foreign debt. A government borrows internally or domestically when it sells securities to its own citizens. In purchasing the bonds, the individuals voluntarily give up command over current usage of resources in exchange for the government's promise to pay a return in future periods. The government uses this purchasing power to acquire resources and services from the private economy. The citizens of the private economy have a smaller total of real goods and services available for private disposition than before the sale of public debt, but they hold debt instruments in the place of the differential amount of private goods, claims against the government which are at least equal to these private goods in value. No person in this initial period in which the borrowing takes place suffers any loss in utility as a result of the operation. It is important to emphasize that this conclusion holds even if the public expenditures financed are completely wasteful.

Let us now compare this with the process of external borrowing. Here the government sells securities to citizens of foreign countries who give up units of their own purchasing power in exchange. The government uses this purchasing power to acquire goods and services abroad, or to exchange with citizens who desire to acquire goods and services abroad. The total amount of resources available for private disposition in the domestic economy is not changed. As with domestic or internal public debt creation, no one suffers any reduction in utility during the period of debt issue and expenditure, and, if the project financed is at all beneficial, some individuals should receive net additions to utility. It must be concluded, therefore, that, at least in the initial period, there is no basic difference between the internal and the external public debt.

Similar results hold if we consider comparable situations in a period subsequent to that in which the government borrows. For an internal or domestic debt, sufficient taxes will have to be levied to finance the interest charges. These payments will be made to bondholders who, in this case, are citizens living in the domestic economy. If, instead, the debt is externally held, the tax payments must be made

to foreign citizens. On this level of comparison, the external debt seems clearly to be more burdensome than the internal debt since there is no offsetting receipt of interest by local bondholders. The interest payments represent a net drainage of funds out of the domestic economy.

This is the source of much confusion. If a correct and careful analysis is made, the conclusion that the external debt is more burdensome can be shown to be erroneous. The previous simple comparison overlooks the central fact that the total national income must always be larger in the external debt case. The reason is clear. Resources are not drawn away from the private economy when the debt is originally created; instead, resources are drawn from abroad. Consequently, the private income in any subsequent period must be higher than it would be if internal rather than external debt is issued. The fact that income is higher in a situation with external debt allows for the necessary drainage of interest payments out of the economy. There is no real distinction in the two cases, so long as the comparisons are properly made.

All of this should not suggest that there are not important institutional differences between the external and the internal public debt. The sale of securities to foreigners will introduce many supplementary problems that are not present when securities are sold to citizens. These relate to such factors as possible changes in exchange rates and transfer difficulties. There is no denying that such problems may arise, and, given the fact that the international payments mechanism may work somewhat less smoothly than the domestic payments mechanism, the servicing of an external debt may be more difficult for a government than the servicing of an equally large internal debt. The point made here is only that the differences lie in these institutional arrangements, not in the fact that the two debt forms are intrinsically distinct in some more fundamental way.

REAL PUBLIC DEBT AND DISGUISED MONEY CREATION

In the preceding discussion, the act of borrowing on the part of government has been analyzed as an alternative to taxation as a means of financing public expenditure. In the full-employment economy, these two methods exhaust the possibilities since (as Chapter 26 has indicated) the direct creation of currency (inflation) produces results equivalent to a form of taxation. If government expenditures are financed out of newly created purchasing power,

it is clear that no real exchange of present for future income takes place, that is to say, no *real* debt is created. Real borrowing, or real debt creation, takes place only if some individuals or groups in the economy deliberately exchange current purchasing power for a governmental obligation to provide an income return in future periods.

It is essential that this basic meaning of real public debt be kept in mind because of the extremely loose usage of the words "debt" and "borrowing" that have come to be incorporated in the descriptions of current fiscal practices. In actual fact, whenever a national government deficit is created, that is, when public expenditures in any one period exceed tax revenues, this deficit is financed by what is called "debt issue." The nominal size of the "public debt" is always increased with a budget deficit. No distinction at all is made in ordinary public discussion between *real debt*, as defined previously, and that which may somewhat legitimately be called "fake debt," or really "disguised money creation." The failure to make this distinction has been a source of much confusion. Since the two methods of financing expenditures have sharply differing effects, the lumping of these two under a single name in discussion tends to conceal the contrast between taxation and real debt issue that has been emphasized. This failure also explains, in part, the reason why the substantially correct analogy between public and private debt has been rejected. Quite obviously, private debtors do not have recourse to money creation, in any form. Therefore, any borrowing must be real borrowing, in the sense used here. National governments, on the other hand, do have recourse to this means of financing expenditures. It follows that, if this process is called "debt issue," the analogy between public debt and private debt is wholly false.

The problem arises here because governments, or politicians, will rarely admit openly that public expenditures are financed through currency creation. As suggested in Chapter 26, the modern version of the money creation process is for the government to finance deficits by an operation that is called "borrowing" from the central bank, and, with its support, from the commercial banks. There is a certain spurious legitimacy in using the words "borrowing" and "public debt" to refer to this operation in the sense that a nominal interest payment is made on the obligations held by the banking system after the completion of the whole operation. But in real terms, no "borrowing" takes place at all since no individual or institution gives up any purchasing power or liquidity in exchange for these obligations of the government to pay an income return in future time periods. The

purchasing power transferred to the government in exchange for these so-called "debt" instruments is created in the process. The banking system is provided with an interest income, not in exchange for and sacrifice of purchasing power or liquidity, but instead for creating additional currency, for carrying out the operation that is specifically within the constitutional power of the national government. In this sense, therefore, the interest payment on the "debt" of this nature is largely unnecessary, and does not at all serve the same purpose or function as interest on real debt.

The public debt outstanding at any given moment of time is made up of both of these components. A significant part of the debt is not the result of any *real* borrowing operation at all; instead it is the institutional "veil" which serves to conceal, not very successfully, an expansion of the money supply. Only that part of the nominal public debt which represents the results of real borrowing in past periods can legitimately be called real debt. It is extremely unfortunate that the same words are used to refer to fundamentally different things in the two cases.

The preceding sections of this chapter have analyzed the effects of real government borrowing, real debt issue. In order to complete the analysis of "public debt" as this term is used in popular discussion, we must now analyze briefly the effects of "fake" debt issues, that is, the effects of money creation which is disguised as public debt issue.

Here it is first of all necessary to distinguish between the economy characterized by full employment and the economy with substantial unemployment and excess productive capacity. In the full employment economy, any creation of additional purchasing power must be inflationary, must cause the price level to increase. The results are equivalent to a tax on the holders of cash balances. The burden of paying for the government expenditures financed in this way falls on those holders of balances. Insofar as the "debt" issued in the process carries nominal interest, this burden of interest falls on taxpayers in future time periods. This interest burden is, in this case, "excess" or "unnecessary," and represents the payment for the subsidy provided to the money-creating agencies, the banking system. This burden cannot, in this case, be considered as that which is incurred for the public expenditures as such.

The situation in an economy with excess capacity and unemployment is different. Here currency creation may be positively desirable. Unless serious bottlenecks and rigidities are present, an increase in

the supply of money should have the effect of increasing real incor and employment without inflation in the price level. As suggest earlier, insofar as this situation prevails, government expenditures c be, and should be, financed at zero or very low real cost. In such cas neither taxation nor real borrowing should be undertaken. Dire money creation becomes an effective alternative means of financi public expenditures in situations like this, and this is the financi method indicated. The obvious method of creating money is the dire one. But if the institutional veil of "borrowing from the bankir system" is considered to be necessary, the nominal interest paid c the "debt" created in the process may be a small price to pay for th substantial benefits to be secured from the operation.

WHEN SHOULD GOVERNMENTS BORROW?

The important normative question to be answered is: Whe should governments borrow? The preceding analysis of public debt should provide a basis for answering this question correctly. But, i order to do so, we must distinguish carefully between the full-employ ment and the unemployment economy and between real borrowin and disguised money creation.

The answer is simpler in the case of unemployment, and thi may be dealt with first. Suppose that the economy is characterize by substantial excess productive capacity with unemployed resource We assume that any increase in aggregate demand will have little o no effect on the level of product prices but will serve to increase rea income and employment. As has been suggested several times, th government should create money in this situation. Government defici should be financed by an increase in the supply of money. *No taxatio and no real borrowing should take place.* Either of these methods o raising revenue must serve to reduce somewhat current demand fo goods and services, an effect which can only be undesirable in th underemployed economy.

The great advantages that direct money creation has over "fake borrowing lies in the absence of any interest cost. Currency pa no interest return to its holders, and the government, when it issu currency, does not place any burden on future taxpayers. "Deb instruments, as such, even if sold to banks, do carry some intere return, and, because of this, involve some real cost which is shift to future taxpayers. If, despite the clear advantages of the more dire form, money should be created by the disguised issue of "debt"

the banking system, the interest payments should be, and can be, very low.

The question as to when governments should borrow becomes more complex when we consider the full-employment case. For purposes of clarification, full employment will be defined as being present when any increase in aggregate demand will increase the price level. In this situation, money creation, whether disguised through "debt" issue or not, should not take place unless the holders of cash balances are chosen as the group which is to be taxed. In the more normal setting, government borrowing, if it is to be undertaken, should be real borrowing.

We may, therefore, reduce the alternatives to taxation and real borrowing in the full-employment economy. What criteria should determine the government's choice between these two financing methods? These criteria must be drawn from the characteristics of the government expenditure to be financed. The major distinction between the two financing methods lies in the location of the real cost of burden in time, the tax method concentrating the cost in the current or initial period, and the borrowing method postponing this cost until later time periods. This difference between the two financing methods allows some reasonably definite rules to be laid down concerning the choice. For those public expenditures or outlays that are expected to yield up all or a major portion of public service benefits in a reasonably short period of time, taxation should be employed in all cases. Clearly, resort to borrowing to finance expenditures of this nature will simply exploit future taxpayers at the expense of current public service beneficiaries. The admissibility of the borrowing method for such cases might open up a Pandora's box of irresponsible public expenditure programs. If legislative assemblies can finance expenditures yielding current benefits without levying current taxation, few or no restraints will be placed upon the limits to such spending.

Real borrowing, as a method of financing public services, should, therefore, be limited to public expenditure projects that are expected to yield up benefits over a long period of time, that is, that are expected to be of a permanent nature. Here the analogy with the private economy is quite close. Business enterprises normally borrow, that is, sell bonds, to finance capital expansion programs. Borrowing is accepted as an appropriate method of financing outlays that are bunched up in time and are devoted to the purchase of equipment which will last over a long period of time. The principle of amortiz-

ing the debt over the period of the useful life of the project is accepted in business, and this principle is also fully applicable to governmental units.

The appropriate rules for choosing between taxation and real borrowing have, to some extent, been incorporated in traditional fiscal practices. Borrowing is limited to the financing of extraordinary expenditures and to expenditures which finance "capital" projects, that is, projects which will yield benefits over time. This idea of debt financing for capital projects is incorporated in the proposals for distinguishing more sharply between capital and current budgeting.

A few practical illustrations of the appropriate uses of taxation and debt issue may be helpful at this point. Taxation should always be employed for financing the current operating costs of government, for the financing of all transfer payments, for the financing of subsidies such as those to agriculture, for the financing of foreign aid, for the financing of most of defense expenditure, and other like items. Resort to borrowing is justified only for such expenditures as long-term highway construction, irrigation projects, river valley developments, and urban renewal projects.

There are possible dangers, however, in following these generally valid rules for choice between taxation and real borrowing too rigidly. When taxation is used as the financing method, there is some guarantee, however rough this might be, that the advantages or benefits of the expenditure outweigh the costs, at least to the majority in the legislative assembly. Taxation forces some sort of comparison between the benefits and the costs of public activity. Any resort to borrowing in lieu of taxation tends to weaken this necessary connection between real costs and real benefits. Even if borrowing is restricted to long-term projects, no real comparison may be involved in the decision to undertake the project since both the benefits and the costs take place in future periods only. Desired projects may be adopted without consideration of the tax burden. It seems essential that, when real borrowing is undertaken, legislative assemblies should consider simultaneously the imposition of future taxes necessary to service and amortize the debt over the useful life of the project.

A second ever-present danger in the modern economy is that attempted real borrowing will turn out to be disguised money creation. This applies only for national governments with the money-creating power. Care must be taken to distinguish as sharply as is possible between genuine debt issue and money creation, especially

so because of the unnecessary confusion that has been introduced by a loose usage of words in the last quarter century.

SHOULD PUBLIC DEBT BE RETIRED?

A second important normative question follows directly from the analysis of the first. Given an existing public debt, when should it be retired? If public debt is created only in those situations indicated in the preceding section, that is, only to finance long-term public investment projects, the answer to this question has already been given. The debt in such cases should be amortized over the useful life of the investment project, and a schedule of taxes providing for such amortization or retirement should, ideally, be adopted at the same time that the debt is issued and the public expenditure carried out. This principle of debt retirement is essential to the proposals for financing capital expenditures separately from current expenditures, that is, for the use of capital budgeting by governmental units.

The more important question concerns quite another matter. A large national debt exists in the United States. This debt is in part the result of real borrowing and in part the result of disguised money creation. The largest part of the debt arose from the deficit financing during World War II. Even for that portion of the $290 billion that represents real debt, no permanent capital assets owned by the federal government exist which represent specifically the results of the debt financing.

To what extent should the federal government take steps to retire this outstanding public debt? This becomes the central question of debt retirement. As we have seen, the interest payments on this national debt now amount to some $9 billion annually, an item in the federal budget that is second in quantitative significance only to national defense outlays. The tax burden involved in raising this interest payment is substantial. Should deliberate policy steps be taken to retire this debt? We shall first discuss this question apart from the economic stabilization aspects; these will be introduced in the following section.

Debt retirement can take place only as a result of budget surpluses. Tax revenues in excess of current public expenditures will produce a surplus of funds that may be devoted to the retirement of existing debt, either by paying off issues of debt as they mature or by purchasing outstanding issues in the open market. These additional tax revenues must be collected from individuals and institutions in

the economy. The real cost of debt retirement must fall squarely on the current taxpayer. On the other hand, the real benefits accrue largely to taxpayers of later periods. Just as debt issue postpones the real cost, debt retirement concentrates these costs. Future taxpayers will be relieved of the interest burden on that part of the public debt that is retired. They will have a larger share of total income available for private or public disposition. A debt retirement operation, therefore, represents a net shift of disposable income from the current taxpayer to the future taxpayer.

Given the nature of the national debt that now exists, it is not at all clear that a positive policy of debt retirement should be followed, even when we ignore the stabilization aspects of this question. The current generation of taxpayers bears little of the responsibility of creating the debt in the first place, and there would seem to be no especial reason why these taxpayers should "subsidize" taxpayers in later periods. No generally applicable economic reasons for a policy of debt retirement appear evident. In certain periods, a debt retirement policy may prove desirable; in other periods, the proper management of the debt may consist in keeping the nominal size of the debt at some constant level.

Actually, political forces will probably prevent any substantial retirement of the existing national debt in any explicitly intended sense. The retirement which is possible may take place because of temporary and unanticipated budget surpluses and because of the opportunities for legitimate debt monetization over time. These will be discussed in the next section.

One additional point should be made here. Treasury Department action may reduce the "real" size of the national debt without changing the nominal size. If the Treasury Department succeeds in reducing the over-all interest cost of the debt, the "real" debt is reduced in the sense that a lower interest charge is involved and hence a lower carrying burden. Insofar as this sort of interest payment reduction is possible without serious conflict with over-all stabilization objectives, it should, of course, be attempted. But here the temptation is great to resort to a simple substitution of disguised money creation for real debt instruments, with the resultant likelihood of price inflation.

STABILIZATION ASPECTS OF PUBLIC DEBT

In applying the analysis of public debt to answering the two questions, when should governments borrow and when should gov-

ernments retire existing debt, we have not specifically considered the use of public debt issue or retirement for the purpose of achieving certain stabilization objectives. It was suggested that genuine or real borrowing should not be employed as a means of increasing aggregate demand, the more efficient means being money creation.

Real borrowing acts to reduce the purchasing power available in the economy. It follows, therefore, that, if this operation is to be used at all for stabilization purposes, it must be used in situations in which some over-all reduction in aggregate demand is needed. If underlying economic forces are such as to make general inflation threaten, the issue of real debt is one appropriate means of reducing the excessive purchasing power. To be effective, in this case, the funds secured through debt issue must not be employed to finance either direct public expenditures or debt retirement. Real borrowing, coupled with some policy of effectively neutralizing the funds, can be a very effective anti-inflationary weapon. Since a sizable portion of the existing national debt is held by the Federal Reserve banks, a means of neutralization is present. By selling government bonds to the public at large and by using the funds collected to "pay off" or "retire" government securities held in the Federal Reserve banks, the government can prevent inflation. Any other usage of the funds would return purchasing power to the economy and would tend to offset, to some extent, the impact of the borrowing from the public.

This anti-inflationary usage of public debt must be compared with taxation designed to accomplish the same purpose. As suggested, both taxation and real borrowing reduce the purchasing power available for private disposition in the economy. Aggregate demand arising in the private sector is reduced in either case. The difference between these two cases is that while taxation reduces purchasing power through a compulsory levy on the incomes of private persons, debt issue reduces this purchasing power through an exchange of debt instruments which embody a promise of the government to pay a future income return to individuals. In one sense, therefore, we may say that the issue of public debt to stop inflation will accomplish the purpose without imposing any real cost currently on individuals. Taxation, by contrast, will place the real cost squarely on current taxpayers. Viewed in this light, taxation seems to be recommended as the soundest policy. Debt issue, as an anti-inflationary device, seems to amount to shifting the real burden of stabilization onto future taxpayers. There seems no more justification for doing this

than there is for financing current public expenditures through borrowing.

We may now consider some of the stabilization aspects of debt retirement. This introduces explicitly some discussion of debt monetization over time as a means of accomplishing some reduction in the annual interest burden. As the economy grows, additional money is required if the average level of product prices is to be maintained. There are several ways in which the required additional money may be introduced into the economy. The government could run budget deficits and finance these deficits with direct money creation. But a more desirable policy might well be that of keeping tax revenues and public expenditures in balance, and introducing new money through the retirement of real public debt. This may be accomplished quite readily by allowing the central bank to purchase debt instruments held by the nonbanking public. As the operation proceeds, the central bank, the Federal Reserve, would acquire more and more of the debt. While the nominal size of the public debt would not be reduced due to the peculiar modern usage of words, the real size of the public debt would be gradually reduced and the interest payments correspondingly lowered. Central bank accumulation of public debt amounts essentially to converting outstanding issues into money. This conversion is clearly undesirable except insofar as monetization is required. With the growth of the economy, some such monetization may take place to advantage provided that the government budget remains roughly in balance.

If serious recession threatens, such monetization can proceed more rapidly. If, for example, a depression on the model of the 1930's should be imminent, a substantial share of the outstanding public debt might be monetized. While it seems reasonably certain that such a threat will not occur in the foreseeable future, the economy will surely grow over time. Debt monetization offers, therefore, the most substantial hope for genuine reduction in the annual burden of the national debt.

NATIONAL VERSUS LOCAL DEBT

The discussion in this chapter has been devoted to the general principles of public debt without reference to the particular governmental unit under consideration. The discussion of what we have called real or genuine public borrowing and genuine or real public debt is applicable to any governmental unit. The discussion which relates to debt as disguised money creation and to debt monetization

applies only to the national government since it alone possesses inherent money-creating powers. State and local governments must issue real debt, and they do not have the opportunity to monetize outstanding debt.

CONCLUSIONS

Genuine public borrowing is an alternative to taxation as a means of financing public expenditure. The essential difference between these two financing methods lies in the nature of the operation through which the revenues are secured. Taxation is imposed on individuals compulsorily, supposedly in exchange for the government's direct provision of public service benefits from the expenditure. Borrowing, by contrast, represents a voluntary exchange through which private people give up purchasing power in exchange for the government's promise to return to them income in future periods. Taxation, therefore, imposes a burden of payment for the public services directly on the individuals present during the time that the expenditure is carried out. Public borrowing, on the other hand, postpones this burden of payment until later periods. The issue of public debt shifts the cost of public expenditure to "future generations" of taxpayers.

This theory of the public debt has not been widely accepted in recent years. A good part of the reason for this has been the confusion between what is real or genuine borrowing and government borrowing operations which are employed to disguise the creation of new money. If the government borrows from the central banks, the result is equivalent to the issue of new money, and the effects are wholly different from those of issuing real debt. This confusion has led to the contrasting theory of public debt which states that the burden is not shifted to future generations, that there is no analogy between public and private debts, and that external public debt differs sharply from internal or domestic debt.

Governments should borrow only in situations characterized by full employment of resources. Borrowing should be limited to the financing of genuinely long-term public projects, and some provision should be made for the servicing and the amortization of the debt over the useful life of the project. Public debts that have been created in the past should not necessarily be retired since debt retirement amounts to the subsidization of future taxpayers at the cost of current taxpayers.

Debt issue is one means of reducing inflationary pressures in the economy provided that the funds secured are effectively neutral-

ized. Taxation seems to be preferred, however, as an anti-inflationary weapon.

The primary prospect for reducing the annual interest burden on the debt lies in the opportunity for gradual debt monetization as the economy grows.

SUPPLEMENTARY READING

As suggested in the introduction to Part VI, the material developed in this chapter is based on that in my book, *Public Principles of Public Debt* (Homewood, Ill.: Richard D. Irwin, Inc., 1958). The student is referred to this book for an elaboration of the several points made in this chapter.

The theory of the public debt presented in the chapter is perhaps the most controversial of the material in this textbook. For a good summary of the contrasting views, the student should see the paper by Professor A. P. Lerner, "The Burden of the National Debt," contained in *Income, Employment, and Public Policy* (New York: W. W. Norton & Co., Inc., 1948).

Chapter 28 THE EXISTING NATIONAL DEBT

The general principles of public debt have been discussed primarily with the view of determining the appropriate conditions under which debt should be created and retired. These principles are applicable for all governmental units and for all time periods. The problems that arise in the management of an existing public debt are of a different sort. These are practical problems which must be continually faced by the Treasury Department. But before these debt management issues can be fully appreciated, the essential characteristics of the national debt, as it now exists, must be examined.

THE ORIGIN OF THE NATIONAL DEBT

As of October, 1959, the federal government debt of the United States amounted to approximately $288 billion, measured in terms of the principal or maturity value of the debt instruments outstanding. Table 28–1 traces the history of this national debt over roughly the last half century.

A glance at this table reveals that the great bulk of the existing national debt is the result of war expenditures. Both in World War I and World War II, the national debt increased manyfold above prewar levels. A serious attempt was made during the decade of the 1920's to retire a substantial portion of the debt created during World War I; note that the debt was reduced from a high level of more than $25 billion to a low of slightly over $16 billion in 1930. The first half of the decade of the 1930's was characterized by government deficits produced by the onset of the Great Depression. These deficits were largely unintentional and were looked upon by almost all parties as being undesirable. In the second half of the 1930's the federal government continued to practice deficit financing, with the conse-

TABLE 28-1

Principal of the National Debt, 1915-60
(Selected Years)

Year	*Total Gross Debt (In millions)*
1915	$ 1,191
1918	12,445
1919	25,484
1925	20,516
1930	16,185
1933	22,528
1936	33,778
1939	40,439
1942	72,442
1943	136,696
1944	201,004
1945	258,682
1946	269,422
1950	257,357
1952	259,105
1954	271,259
1956	272,750
1958	276,343
1960	290,000 (est.)

Source: *Annual Report of the Secretary of the Treasury, 1958.*

quent increase in the size of the outstanding debt. But by the second half of this decade, the so-called "Keynesian revolution" in economic thinking, at least at the policy level, had occurred to some extent. As a result, deficits were no longer viewed with such dire forebodings, and the deficits subsequent to the sharp and short-lived recession of 1937 were deliberately planned.

This period of depressed economic activity, the 1930's, merged into the period of rearmament and war in the 1940's. As is normally to be expected, the extraordinary expenditures made necessary by war generated huge government deficits. The national debt increased from $40 billion in 1939 to $269 billion in 1946. The experience in the two decades following World War II was somewhat different from that during the decade following World War I. No explicit and deliberate attempt was made to reduce the size of the outstanding debt. The slight reduction that did occur between 1946 and 1952 was the result of Treasury Department reduction in Treasury balances, and in the disposition of temporary and unintended budgetary surpluses. Since 1952 the debt has tended to rise, with the most substantial increase coming between 1959 and 1960 as a result of the $12.5 billion federal deficit in fiscal 1959, a deficit that was generated, in part

deliberately, as a means of combating the 1957–58 recession in economic activity, and in part by the operation of the built-in stabilizers in the budget.

The experience in the postwar years would seem to indicate that the national debt, in terms of size, moves in one direction only. The built-in flexibility of the federal budget will more or less guarantee substantial deficits during periods of recession, thereby increasing the size of the debt. This happened in the 1959 fiscal year. On the other hand, political forces seem to be such that the possibly offsetting surpluses during periods of inflation or threatened inflation will not be allowed to reduce the outstanding debt. These forces will tend to push through tax reductions or expenditure increases in such periods in lieu of debt retirement. As a result we can expect that the national debt will move upward over time in a stair-like fashion.

If the size of the debt in comparison to the gross national product is examined, however, the relatively small increases that have occurred in postwar years need not be cause for great alarm. In 1946 the national debt reached a high point in relation to GNP; in that year the principal of the debt outstanding amounted to approximately 127 per cent of GNP. As the postwar growth in GNP took place, the national product outdistanced the national debt. In percentage terms, the national debt currently (1960) amounts to roughly 60 per cent of the size of GNP, or less than half the proportion shown in the immediate postwar period.

THE COMPOSITION OF THE NATIONAL DEBT

What, specifically, is included in the national debt, as this term is commonly used? Officially, the national debt is defined to include all interest-bearing obligations of the federal government. Certain noninterest-bearing obligations are included, but these are of insignificant importance. The issue of currency by the federal government is not included in the figures for the national debt.

The interest-bearing debt may be classified on the basis of type of security issued, which, in turn, reflects largely the maturity of the obligation. The important categories are bonds, notes, certificates, and bills. We shall discuss each of these categories briefly.

Government Bonds

Bonds are issued by the federal government for periods of longer than five years. The most familiar to the public, although not quanti-

tatively the most important, are the Series E Savings Bonds. These are sold directly to individuals and are not *marketable.* Currently (1960) an interest return of 3¼ per cent is guaranteed on these bonds if they are held to maturity by the individual purchaser. If the purchaser desires to convert the savings bond into cash prior to maturity, a fixed redemption schedule is provided. Since the only loss in cashing such securities prior to maturity is a portion of the interest return, these bonds serve as close substitutes for cash in the asset holdings of individuals. They are classified, for this reason, as "near monies." The individual holder is fully protected against any capital loss in money terms. He may, of course, be subjected to capital losses in real terms during periods of inflation, as were the holders of such securities during the period immediately following World War II.

The *marketable* issues of long-term government bonds are more important in an aggregative sense than are the savings bonds. These bonds are sold directly to individuals, nonfinancial institutions, financial institutions, and commercial banks. Certain issues are restricted to nonbank purchasers. By saying that these bonds are marketable we mean that the individual purchaser may convert one of these bonds into cash at any time by selling it on the established open market for such securities. A glance at the financial page of the daily newspaper reveals that an organized market exists for such bonds. The government provides for no redemption of such bonds prior to maturity, and it does not guarantee that any particular price will be supported on the open market. As compared with the savings bonds, the marketable issues are not so liquid, that is, they do not serve the same function of "moneyness" as do the savings bonds. The individual investor must take the risk of a capital loss if he wants to convert his bond into cash before maturity. In periods of rising interest rates, which characterized the American economy in 1955 and 1956, and again in 1959 and 1960, holders of marketable long-term Treasury bonds suffered sizable capital losses, at least on book values.

The attempt to follow a policy of keeping the prices of marketable bonds at some satisfactory level close to par value was one of the main contributing factors to the inflation that occurred in the immediate postwar period of 1947 and 1948, and again in 1950. The Treasury Department would not allow the prices of marketable issues to fall to levels dictated by the ordinary demand and supply forces. The Federal Reserve banks were directed by the Treasury to support bond prices by purchasing sufficient quantities to keep prices at support levels. This amounted to a net creation of new reserves for the

commercial banks, which originally had purchased a large share of the long-term national debt during World War II. Through this policy of price support, the Federal Reserve was effectively prevented from exercising its standard restrictive policy, which would have indicated a sale rather than a purchase of government securities. This support policy was abandoned in 1951, and since that time no attempt has been made to support the prices of marketable government securities at any rigid level. The Federal Reserve System has tried to keep out of the long-term government securities market, and has supported the prices only at times when certain temporary forces have disturbed the orderly movements of prices.

The interest rate on long-term marketable securities is determined by the demand for such securities in the open markets along with the supply of both federal obligations and the closely competing high-grade corporate bonds. Interest on outstanding issues range from a low of 2¼ per cent on certain bonds issued during periods when interest rates were much lower than those currently (1960) prevailing, to a high of 4 per cent on bonds more recently offered. Fluctuations in market prices will, of course, tend to adjust the capital values of the separate issues to insure that the rates of yield on comparable issues remain roughly equal. The holders of the low-interest bonds have, at some time since the issue, suffered sizable capital losses due to the general increase in the pattern of interest rates.

Since World War I, the maximum legal interest rate that the government could offer on a long-term bond was 4¼ per cent. Since the rates of yield, as determined by the market for outstanding issues, reached this level and beyond in 1959, President Eisenhower in June, 1959 requested the Congress to increase this maximum legal limit on interest. Congress took no action, however, the result being that the Treasury Department, in 1959 and early 1960, could not sell long-term issues.

Treasury Notes

Treasury notes are securities carrying maturity dates between one and five years. They are all marketable. Since, normally, short-term interest rates are lower than long-term rates, these can be issued at a slightly lower interest cost to the government than bonds. The length and the terms of the issues can be more or less "tailored" to meet the special needs of investor groups. The legal ceiling on the rate on long-term bonds does not apply to short-term issues. In Octo-

ber, 1959, the Treasury Department issued notes at 5 per cent interest. This issue proved to be very popular with the public, the particular notes securing the name "magic fives."

Certificates of Indebtedness

Certificates of indebtedness are securities issued normally for one year. Except in special circumstances, the shorter the maturity is, the lower the interest. This is because the risk of capital loss becomes less, the closer the maturity date. The investor need only hold the security until maturity to be insured a return of full capital value since the government can always be expected to fulfill its financial obligations.

Treasury Bills

At the so-called "short end" of the national debt structure, Treasury bills are issued for periods of 90 or 120 days. Bills are normally marketed at a discount with the yield rate being determined by the rate at which the fixed maturity value is discounted. This feature is in contrast with other government securities which carry fixed coupon rates for interest. Bills are quite clearly "near monies"; the purchasers are individuals and institutions, both financial and nonfinancial, possessing cash balances that are temporarily idle. Due to the increased liquidity, these securities normally sell at lower interest rates than the longer-term securities. However, certain peculiarities in the demand and supply situations in the separate markets may cause the short-term or bill rate to be higher than the long-term rate. A large Treasury refinancing which takes place largely in bills may drive the price of bills down and the rate of yield up beyond the rate on long-term bonds, as was the case in 1959.

Table 28–2 shows the composition of the federal debt as of October, 1959, both as to type of security and as to marketability.

It will be noted from Table 28–2 that special issues account for a sizable share of the national debt. These securities are sold directly to the various governmental agencies and trust fund accounts. For example, the reserves that have been accumulated in the Old Age and Survivors Insurance Trust Fund are required by law to be invested in government securities. This fund alone accounts for about half of the total of special issues.

Marketable issues make up almost two thirds of the total debt. Roughly speaking, two thirds of the debt is in long-term securities, including special issues in the long-term totals. As we shall discuss

TABLE 28-2

Composition of the Federal Debt, October, 1959
(In millions of dollars)

Type of Security	*Marketable*	*Nonmarketable*
Bonds		
Treasury bonds	$ 84,778	
Other bonds	50	
U.S. savings bonds	.....	$ 49,721
Treasury bonds, investment series	.....	8,132
Depositary bonds	.....	176
Notes	40,758	
Certificates	20,343	
Bills	37,128	
Special issues	.....	44,400
Non-interest-bearing debt	.....	2,022
Totals	$183,057	$104,451

in the following chapter, the recent attempts of the Treasury to "fund" more of the debt, that is, to shift to more long-term issues, have not been successful.

The "moneyness" of the outstanding debt cannot be directly measured, although it is clear that public debt instruments serve as close substitutes for money, especially savings bonds and short-term bills. An indirect means of estimating the "moneyness" of the debt is provided by comparing the total principal with the annual interest charges. On a principal of some $286 billion, an annual interest charge of slightly more than $9.5 billion was estimated for the 1961 fiscal year. This amounts to a percentage rate of only 3.3 per cent. The differential between this rate of interest, actually paid by government on the debt, and the rate which would have to be paid on pure debt free of all "moneyness" gives some indication of the value of the liquidity aspect of public debt instruments. If $9.5 billion is capitalized at a rate of 5 per cent, a total of $190 billion is indicated as a capital value. The difference between $190 billion and the $286 billion provides some very rough measure of the degree to which the national debt either carries a pure liquidity premium or else has been effectively "monetized" through general increases in the rates of yield.

THE OWNERSHIP OF THE NATIONAL DEBT

Public debt instruments are held by individuals, by business corporations, by financial institutions such as insurance companies,

by commercial banks, by the Federal Reserve banks, by state and local governments, and by special governmental agencies and trust funds. Table 28–3 shows the distribution of ownership among these classes of investors as of August, 1959.

TABLE 28-3

Distribution of Ownership of Federal Debt, August, 1959

Class of Investors	*Debt Held (In billions)*
Banks	
Federal Reserve banks	$ 26.7
Commercial banks	60.8
U.S. government investment accounts	54.6
Individuals	
Savings bonds	46.7
Other	19.2
Insurance companies	12.1
Mutual savings banks	7.3
Corporations	23.6
State and local governments	10.0
Miscellaneous investors	20.6
Total	$290.5

The important distinction in the ownership pattern of the debt is that between bank-held debt and debt held outside the banking system. The commercial bank holdings of federal securities present the greatest problem since these represent potential reserves behind a possible multiple expansion of the money supply. The commercial banking system, based as it is on fractional reserves, can generate an expansion in the supply of bank credit which is some multiple of the expansion in reserves. If the demand is present, a commercial bank can convert each dollar's worth of federal securities into reserves. This was precisely the problem in the immediate postwar years between 1945 and 1951. Commercial banks, having purchased large numbers of federal securities during the war, tried to unload these and convert them into reserves to finance the expanded postwar demand for credit which business firms and individuals sought to secure. The normal workings of the market would have driven the prices of these bank-held securities downward as banks sold them, but the policy of price support for securities prevented this. As a result, federal securities became almost equivalent to excess reserves for the banking system, and a multiple expansion in the money supply was allowed to take place.

Since 1951, the Federal Reserve has been free to counteract, if desired, any attempt by commercial banks to convert securities into reserves. The Federal Reserve has not been forced by the Treasury to purchase securities from the banks. The result has been wholly different from that which was present in the immediate postwar years.

The Federal Reserve ownership of securities varies, of course, with the extent and direction of its open-market operations. If inflation is threatened, the System will, in addition to using its other policy weapons, enter the market and sell off holdings of government securities. This will reduce bank reserves and thereby tighten up on the potential expansion of credit. On the other hand, in a recession, the Federal Reserve will enter the market and purchase government securities. Through this action, commercial bank reserves are increased. The extent of the Federal Reserve open-market action during the 1957–58 recession may be measured roughly by an examination of holdings of government securities during the period. Federal Reserve holdings of government securities reached a post–Korean War low of $23 billion in June of 1957, at about the onset of the recession. As the recession continued, a slow increase in holdings took place until April, 1958, when the total reached $23.7 billion. At this time, the recession hit bottom, although this fact was not, of course, known immediately. A more rapid rate of Federal Reserve purchases was instituted, until, in December, 1958, the total stood at more than $26 billion. After December, 1958, both as a result of seasonal patterns and the clear evidence of an upturn in business activity, some reduction in holdings was commenced. Over the recession, the Federal Reserve holdings expanded by more than $2 billion, even after seasonal adjustments are made.

One of the goals for debt management has been to shift a larger share of the national debt to the nonbanking public. This is based on the recognition that bank-held debt carries with it a certain built-in inflationary potential, but this objective is also motivated by a desire to reduce what is called the rollover of the debt by converting more of it into long-term issues. Some of these points will be discussed in the next chapter.

DEBT LIMITATION

As was suggested, national debt is created only when federal expenditures are in excess of federal revenue collections. Both federal spending programs and federal taxes require the approval of both the executive and the legislative branches of the government.

Nevertheless, Congress has, since 1917, imposed a ceiling on the amount of national debt outstanding. While this debt limit has almost always been adjusted upward when Treasury operations have required, this limit has served to impose certain supplementary restrictions on federal fiscal activity. The existence of a limit has caused some activities to be financed in such a way that debt issued would not come under the legal ceiling imposed. This evasion device has been accomplished by the issue of quasi-public debt by certain of the federal authorities. The whole debt ceiling idea seems to be a good example of the sometimes bewildering maze that characterizes political Washington. In early 1959, the so-called "permanent" ceiling was $283 billion, with a "temporary" ceiling of $288 billion. In June, 1959, the administration requested and secured approval for an increase in the "permanent" ceiling to $288 billion and a boost in the "temporary" ceiling to $295 billion.

CONCLUSIONS

The national debt, as it exists, is largely the product of World War II. More than 80 per cent of the outstanding debt is attributable to the deficit financing of World War II and subsequent years. The relative size of the debt has, however, been gradually decreasing in the postwar period as the national output has grown. In early 1960, the national debt, valued in terms of maturity values, amounted to slightly less than 60 per cent of the gross national product.

The debt may be classified by the types of issue. Long-term issues, bonds, make up somewhat less than half of the total. If special issues held by the governmental agencies are added to this, the total long-term debt reaches a proportion of two thirds of the total. Savings bonds, sold directly to individuals, are nonmarketable. These carry fixed redemption schedules, and serve as a "near money." Marketable bonds, by contrast, possess less "moneyness" than any other federal debt instruments. The yield rate on bonds increased to such an extent that, in early 1959, the legal interest rate ceiling of 4¼ per cent interest was exceeded.

The short-term, or nonfunded, debt is made up of Treasury notes issued with maturities from one to five years; certificates, with maturities of one year; and bills, with 90- or 120-day maturities. These short-term securities possess a higher degree of liquidity than long-term bonds and, normally, although not currently (1960), carry a lower interest rate.

The ownership of the national debt is distributed rather widely. The sensitive part of the debt is that held in the commercial banking system since this carries with it a certain inflationary potential. Federal Reserve operations can, of course, prevent this bank-held debt from exercising disturbing influences on the economy.

SUPPLEMENTARY READING

For current factual information concerning the composition of the debt, the ownership of the debt, maturity schedules, and similar data, the student should consult the monthly *Treasury Bulletin*. For more detailed accounting, including some historical data, he should consult the *Annual Report of the Secretary of the Treasury*.

Chapter 29 MANAGEMENT OF THE NATIONAL DEBT

Public debt management, as such, is defined to include that set of operations which must be performed by the Treasury Department in "maintaining" a national debt. That is to say, debt management takes place even when no new debt is being created and no old debt is being retired, in net terms. Even if the federal budget were to be kept continuously in balance, the Treasury would still face tremendous management problems. As they are actually confronted, the management of the existing debt is intermingled with either net creation of new debt or net retirement of old debt, but it seems useful to discuss debt management, as such, in terms of a constant nominal value for outstanding debt.

WHY IS THERE A DEBT MANAGEMENT PROBLEM?

If we specify that the total value of the national debt is to remain unchanged, why should there arise any "maintenance" problems at all? This question may best be answered by contrasting the actual composition of the national debt with a debt composed solely of "consols." A consol is defined as an obligation of the government to pay a certain interest annually without any maturity date at all. Consols represent government debt issued for perpetuity; governments may redeem consols only by entering the market and repurchasing them. This form of government security has never been used by the federal government, although it has been employed by many other national governments. It has many advantages. One of the most important of these is that the issue of consols comes closer than anything else to representing "pure" borrowing. There is less "moneyness" in a consol than in any debt instrument bearing a fixed maturity date.

If the outstanding debt were solely in the form of consols, there would be no debt management problem as we have defined it. The government would be faced with the reasonably simple task of paying out a fixed dollar amount of interest each year to service the debt, but, so long as no new issues were sold and no old ones repurchased, there would be nothing else to do. All of the management problems arise, therefore, because the debt is not permanent in form. Consols do not even make up a small part of the existing debt. Although everyone expects that most of the national debt will be, in fact, permanent in the sense that it will not be retired, the debt instruments outstanding are not permanent. As a result the Treasury is continually faced with the problem of refinancing issues as they come due or mature. Separate issues of debt bear separate maturity dates, and as these dates appear the Treasury Department is faced with the necessity of retiring old debt and reissuing new debt, while keeping the aggregate size of the debt unchanged.

Table 29–1 illustrates the magnitude of the refinancing problem that presents itself to the Treasury Department. This table shows a part of the maturity schedules for interest-bearing securities looked at as of the single date of March 31, 1959. Data are included for securities maturing in 1959 and 1960 only; a complete picture would include other years in which long-term securities reach maturity.

A glance at Table 29–1 indicates roughly the task that the Treasury will face as of *any* given date during the current period. As of March 31, 1959, more than $56 billion of the debt was scheduled to mature in 1959, almost one fifth of the debt outstanding. This figure, taken alone, tends to understate the extent of the debt management problem since many of the bills outstanding were refinanced with new bills which also matured in 1959. The table can also be misleading in reference to the problems to be faced in 1960. Fixed maturities of only $20 billion are indicated in the table. But, and here is a good illustration of the problem with short-term financing, since the Treasury did not succeed in "lengthening" significantly the term of the debt in 1959, many of the short-term issues experienced a "rollover" in 1960. In other words, if the issue of bills due in, say, September, 1959, was refinanced by the sale of more bills, this merely put off for 90 or 120 days the same problem all over again. Unless the Treasury succeeds in converting more of the national debt into long-term issues, the total share of the debt coming to maturity each year will tend to increase over the decade of the 1960's as more and more long-term bonds issued during the war years reach maturity.

TABLE 29-1

Maturity Schedules of Interest-Bearing Public Marketable Securities of the United States Government and Outstanding March 31, 1959 (1959 and 1960 only)

Year and Month	Amount of Maturities (In millions of dollars) Fixed Maturity Issues	First Call
1959		
April		
Bills	7,599	
Notes	119	
May		
Bills	5,601	
Bills (special)	2,735	
Certificate, 1¼%	1,817	
June		
Bills	6,602	
Bills	2,997	
Bond, 2¼%	.....	5,266
July		
Bills	2,001	
August		
Bills	1,596	
Certificate, 1⅝%	13,500	
September		
Bills	1,601	
Bills	1,502	
October		
Note, 1½%	99	
November		
Certificate, 3⅜%	7,711	
Note, 3½%	1,184	
December		
Bond, 2¼%	.....	3,455
Total for 1959	56,663	8,722
1960		
January		
February		
Certificate, 3¾%	11,263	
April		
Note, 1½%	198	
May		
Note, 3¼%	2,738	
Note, 3½%	2,406	
October		
Note, 1½%	278	
November		
Bond, 2⅛%	3,806	
December		
Bond, 2¾%	.....	1,485
Total for 1960	20,788	1,485

Source: *Treasury Bulletin*, May, 1959, Table 1, p. 29.

DEBT MANAGEMENT OBJECTIVES

In managing the national debt, the Treasury Department has several objectives, some of which are mutually conflicting. The first objective of debt management has already been mentioned. In order to reduce the sheer magnitude of the management problem itself, one objective is to "fund" as much of the debt as is possible, that is, to convert the short end of the debt into long-term securities. Quite clearly, if this were the only management objective, it could be accomplished with dispatch. As issues mature or become callable, the Treasury could simply sell consols, or very long-term bonds, in sufficient amounts to secure the necessary replacement funds, paying whatever interest rate the market dictates. The fact that movements to lengthen the debt have not been very successful, despite all of the pronouncements of intent on the part of the authorities, indicates clearly that other objectives must outweigh this one in importance.

The first objective that clearly arises in conflict with the "funding" objective is that of minimizing the interest cost on the national debt. As has been repeated several times, the $9 billion of interest is no small item in the federal budget, and the Treasury Department is under considerable pressure to reduce this cost to the lowest possible figure. A wholesale refunding of the debt, as suggested in the preceding paragraph, would appear to cause the interest cost on the debt to rise drastically and substantially over time. For example, let us suppose that the Treasury Department, in February, 1960, chose to refund the $11 billion worth of certificates maturing by an issue of consols. The rate of interest on this total might increase from 3¾ to perhaps 6 per cent. On this part of the debt alone, an added interest cost of almost $250 million would have been created.

The conflict between the funding objective and that of minimizing the total interest cost may, however, be more apparent than real. To the extent that the funding into long term at higher interest reduces the liquidity or the "moneyness" of the debt, a larger share of the debt can be converted, at the same time, into money, or its equivalent. There would be no need, therefore, to convert all of the outstanding debt into long-term issues. While the funding would serve to increase the rate of interest paid on long-term issues, this operation, in reducing the liquidity premium on the outstanding debt, would allow a greater amount of highly liquid near money to be issued at very low interest cost. If such issues as the latter could be sold directly to the Federal Reserve banks there would seem to be no need that interest be paid at all.

A third objective, of considerably less positive importance than the others mentioned, is that of managing the national debt so as to accommodate to the fullest possible extent the particular needs of various classes of investors. By following such a policy, the Treasury can, of course, secure somewhat more favorable interest terms. This third objective is, therefore, in some sense subsidiary to the second. But quite apart from the lowering of interest cost, there may exist a positive objective of using the debt to provide for the investment needs of certain groups. The purchase of Treasury bills provides a very important means of earning short-term returns on cash balances for institutional investors, including state and local treasuries. Tax anticipation bills allow business firms to earn some interest return on funds accumulated for later payment of taxes. Savings bonds provide a safe (in money terms) investment for those classes of individuals who do not have either information on or access to more sophisticated forms of investment. A slight variant of this debt management objective involves the desire to insure that the national debt be widely distributed as to ownership among the separate groups of the population. By maintaining a variety of issues, the Treasury can help to prevent the debt from becoming overly concentrated in ownership.

The fourth objective for debt management policy is that of securing some satisfactory or effective coordination between debt management policies on the part of the Treasury and the more general monetary policies of the Federal Reserve System. By necessity the Treasury is involved in monetary policy when it manages the national debt. It is, therefore, almost impossible that a sharp division of function can be effected between the Treasury and the Federal Reserve as regards the promotion of stabilization objectives.

ALTERNATIVE DEBT MANAGEMENT POLICIES

Three possible approaches may be taken toward this problem of coordinating debt management with stabilization objectives of the Federal Reserve System. First of all, the Treasury Department can explicitly recognize that its debt management policies exert important stabilizing or destabilizing effects on the economy and it can, therefore, attempt to support the general policy of the Federal Reserve System. The adoption of this policy would suggest that the Treasury Department refund the short issues of the national debt into long-term issues during periods when it is generally desirable to impose additional credit restraint on the economy, that is, during periods

of threatened inflation. Conversely, the Treasury would refinance maturing issues exclusively in the short-term market during periods of economic recession and, if necessary, refinance long-term bonds with the issue of short-term bills. This policy, which we may call *positive* debt management, has the apparent disadvantage of forcing the Treasury to enter the long-term market during precisely the periods when the interest rate is high and to refrain from entering the market with long-term offerings when the rate is low. The result is that this policy would tend to maximize, rather than minimize, the interest cost of carrying the debt. It conflicts more violently with the interest cost objective than any other policy that could be followed. A second disadvantage of this positive debt management policy lies in the division of responsibility for achieving stabilization objectives which it fosters. The Treasury Department and the Federal Reserve Board are independent agencies, despite the close interdependence of their actions. The Federal Reserve Board is charged with the primary responsibility of using monetary policy to achieve certain stabilization goals. Unless the positive steps in debt management could be subjected to Federal Reserve control, there is always the danger that the two separate agencies would not effectively coordinate policy moves, despite the intent to do so. Against these important disadvantages must be placed the inherent fact that debt management does provide, more or less automatically, an effective instrument for promoting certain stabilization purposes. Whether or not a positive policy of debt management would result in a lengthening or a shortening of the term structure of the national debt would depend on the underlying forces at work in the economy. If inflation were continually threatened, this policy would be consistent with a funding of the debt into long-term issues. On the other hand, if recession were the more characteristic pattern of the economy, a more rapid "monetization" of the debt could take place.

A second approach may be called a *neutral* policy of debt management. In this policy, the Treasury Department would deliberately refrain from promoting stabilization objectives through its debt management operations. It would recognize the suzerainty of the Federal Reserve Board in the realm of stabilization policy, and it would try to keep its debt management wholly neutral. A genuine policy of neutrality in this sense would, perhaps, be extremely difficult for the Treasury to follow. But some elements of such a policy may be outlined. The Treasury would try to keep its refinancing operations from exerting either a stabilizing or a destabilizing effect on the nation's

money and credit markets. When an issue of public debt came due, the Treasury would attempt to replace the issue with another which would fully offset retirement of the first. In a period of unchanging interest rates, this would suggest the maintaining of a constant term structure of the debt. With changing rates over time, certain minimal shifts in the term structure could be made. But, by and large, the debt would be maintained in roughly the form that currently exists. In periods of rising interest rates, the Treasury should expect interest rates on the national debt to rise, and it should be willing to enter the long-term market and pay the full market rates if long-term issues mature. Under this policy, the long-run level of interest costs will depend on the level of interest rates in the economy at large. As in the first case, if inflation is the more constant threat, and if monetary policy is used to combat it, the interest rates on the national debt will rise. While a fully neutral policy might reduce interest costs on the debt somewhat below those incorporated in a positive debt management policy, the primary conflict would still be that found when the objective is to minimize the interest burden.

A third debt management policy may be classified as a *negative* one. Under this approach, the Treasury would be primarily dominated by the objective of minimizing interest cost on the national debt. It would take advantage of market conditions to refinance debt in such a way as to reduce the over-all interest charges. This would suggest that the Treasury refrain from entering the long-term market during periods of money and credit stringency because of the high interest rates. Conversely, the Treasury would make every effort to enter the long-term market during periods of economic recession, when interest rates are relatively low. In this way, the interest cost on the debt is minimized. The extent of refunding that would take place over time would again depend on the underlying characteristics of the economy. If inflation should prove the more recurrent threat to stability, the debt would become of shorter and shorter term. If, on the other hand, the economy should be faced with frequent recessions, a substantial refunding of the debt into long-term issues could take place.

This negative policy seems undesirable on almost all counts. In the first place, it requires that the Federal Reserve offset the adverse stabilization effects of all Treasury debt operations. Not only does the policy represent deliberate refusal to utilize a weapon already at hand, it actually involves using the weapon in the wrong direction. In addition, if the minimization of interest cost is to be the

dominating objective of debt management, there seems little reason to stop with a merely negative policy. The logical implication of this approach would seem to be that of monetizing the whole of the debt, quite independently of the effects on Federal Reserve attempts at stabilization. In this way, the interest cost could be all but eliminated. The Federal Reserve, in trying to offset such action on the part of the Treasury, would be forced to undertake drastic restrictive action, with questionable chances of success.

DEBT MANAGEMENT EXPERIENCE

The postwar experience of debt management in the United States has not been praiseworthy. As has been pointed out, the policy from the end of the war until 1951 was dominated by the support of government security prices in the open markets. This policy was dictated, at least in part, by the reluctance of the Treasury Department to face up to the increased interest cost that the release of security prices would have introduced. After 1951, high hopes were variously expressed for a more rational and internally consistent debt management policy. But despite many pronouncements of Treasury intent to lengthen the structure of the debt, the interest cost objective has again proved to be of major significance in influencing Treasury policy. In the midst of the 1958 recession, the Treasury sold bonds in the long-term market because of the opportunity to sell at lower interest rates. In 1959, when interest rates had increased, the Treasury refused to enter the long-term market, partly because of congressional refusal to increase the legal interest ceiling. This experience suggests that the policy labeled previously as a negative one more closely describes postwar experience than any other. To some extent this characterization is perhaps unfair, and the neutral policy may be more descriptive. In any case, experience seems clearly to indicate that the interest cost objective, rational or irrational, is sufficiently strong to prevent any geninue approach to a positive policy of debt management in the current institutional setting.

POSSIBLE INNOVATIONS IN DEBT MANAGEMENT

The sheer magnitude of the national debt offers to the Treasury Department wide opportunities for introducing innovations into its debt management policy, innovations which may serve to accomplish somewhat more satisfactorily the objectives discussed in preceding paragraphs. One possible step, which would represent a genuine inno-

vation for the United States, has already been discussed. The refunding of a certain part of the national debt into consols seems clearly to be advantageous. By this step, the specific debt management task is eliminated for that part of the debt. In addition, consols would provide a form of investment that is not now readily available to American investors. The major limitation upon the issue of consols is the legal limitation placed on the rate of interest payable on long-term securities. If this legal ceiling is eliminated, the Treasury should take steps to introduce consols as one form of the national debt.

A second innovation which might be introduced, provided legal sanction were secured, is that of issuing a lottery bond. This has recently proved to be highly successful in Great Britain. Under this plan, the individual is allowed to purchase a government security with little or no guaranteed interest return. He is guaranteed only the return of the principal upon maturity. But the ownership of the security provides the individual with the chance of participating in a lottery which offers large rewards to the few winners. Many variations could be worked out under this general rubric, but a simple example may be helpful in illustrating. Let us suppose that the government desires to secure $1,000 from the public through debt issue. It sells ten $100 bonds at zero interest, its obligation being merely to pay off the full principal on each bond, that is, $100, at the end of ten years. At the same time it promises to hold a lottery at the end of the ten years, or earlier, and to pay a lump sum of $300 to the holder of one of the bonds to be selected by some random device. If the government succeeds in selling the bonds under such conditions, it clearly has reduced its interest cost below what would be required to carry the bonds in a more normal way. It is, in a sense, selling risk to individuals who want to purchase it; given the observed fact that some individuals do like risk well enough to pay for it, there is no inherent reason why government should not sell this along with its promise to pay future income.

There are, of course, only a certain limited number of potential purchasers of such securities, and this type of issue could not be expected to absorb a major part of the debt, even if fully sanctioned. But such an innovation would provide a new and different type of security not now available to the American investor, and it could be expected to be of certain limited popularity. The introduction of the lottery bond would represent one means whereby interest cost could be reduced without at the same time monetizing the debt.

A third innovation in debt management might be that of selling a constant purchasing power bond. This has been tried in several of the European countries. This step represents, of course, a means of removing for investors the fear of losses in real value caused by inflation. In real terms, the United States, as well as most other countries, has defaulted on its obligations to its wartime creditors. Debt was issued in fixed money value and the interest payments were calculated in fixed money terms. Inflation has reduced the real value of these fixed money claims against the government to the extent that the "real" rate of interest on the original investment is, in many cases, reduced to negative figures. The purchasing power security is designed to prevent the possibility of such exploitation of the government bondholder.

Independently considered, this innovation has much to recommend it. For small investors, the savings bond no longer offers the promise of reasonably stable real value. A purchasing power bond would surely be very popular with the investing group that previously has purchased savings bonds, and the government could market such securities at very low rates of interest. Many individuals, if guaranteed the full return of the real value of the principal at maturity, calculated in terms of the appropriate price index, would invest without the necessity of a high interest return. Considered more broadly in the context of over-all governmental policy, the introduction of the purchasing power bond would appear to many people as an open admission that the public's faith in the ability of the monetary authorities to maintain a stable value of money has been destroyed or substantially weakened. The introduction of such a security would represent yet another adjustment to a quasi-permanent inflation of the sort discussed in Chapter 26. Once an inflation did occur, the Treasury obligation to pay off its creditors in constant real values would add fuel to further inflation. In the current setting, the creditors of the Treasury, the holders of public debt instruments, constitute one of the most powerful groups in the economy that is wholly opposed to inflation. On the other hand, it should perhaps be recognized that a widespread use of the general type of index-number contract which the purchasing power bond represents would reduce the support for inflation that currently stems from powerful debtor groups in the economy.

Many other innovations in debt management policy could be introduced. In fact, debt management seems to offer a fertile field

for imaginative planning in the decades ahead. Some of the possible changes may be quite minor, such as the tailoring of particular security issues to meet highly specialized and limited needs. Others may be quite significant, as the three discussed in the preceding paragraphs would be. In early 1959 there was some discussion about issuing a special education bond, designed particularly for those individuals desiring to put aside current income to finance college education for their children. No attempt has been made here to discuss the many possible changes in debt management that may be introduced.

CONCLUSIONS

Debt management includes that set of operations which is made necessary by the impermanence of an outstanding debt. Management problems arise because the Treasury Department must constantly retire maturing issues of debt and refinance these with new issues. The shorter the term structure of the debt, the more troublesome the debt management problem. Roughly speaking, about one fifth of the whole national debt "rolls over" each year, that is, must be refinanced at least one time during the year.

If the economy were completely stable over time, the debt management problem would not be a serious one. But the free economy is characterized by fluctuations, the severity of which may be dampened by effective monetary policy. Monetary policy is in the domain of the Federal Reserve Board, and it works largely through changing the availability of money and credit. Interest rates move upward and downward in response to the situation of ease or restraint imposed by the authorities. It is this fluctuation in interest rates and in the availability of funds that presents the gravest problems for the Treasury in debt management.

Broadly speaking, the Treasury Department tries to accomplish several objectives in managing the debt. First, it makes an attempt to fund as much of the debt into long-term securities as is possible in order to reduce the size of the management task itself. Secondly, it tries to reduce the interest cost of carrying the debt. Thirdly, it tries to adjust debt issues so as to meet the needs of the various investor groups in the economy. Finally, it must try in some way to coordinate its policies with those of the Federal Reserve Board.

These objectives tend to be mutually conflicting in many instances. A positive debt management policy which would assist the monetary authorities would run afoul of the minimization of interest

cost. So would a neutral policy of keeping debt management apart from the problems of stabilization. A negative policy would minimize interest costs, but would make the task of the stabilization authorities harder than need be. Postwar experience indicates that the objective of minimizing interest cost on the debt has been of major importance.

The field of debt management offers wide opportunities for innovation. The introduction of consols and lottery bonds offers certain advantages, but the use of the purchasing power bond seems more questionable.

Part VII

STATE AND LOCAL FISCAL SYSTEMS

Chapter 30 STATE-LOCAL EXPENDITURE PATTERNS

Discussion and study of the public finances is too often concentrated on problems that arise at the federal or central level of government, especially in the United States. The political structure of the United States is that of federalism, with sovereignty legally and constitutionally divided between the federal government and the states. Despite the increasing importance that the federal government has assumed in the last quarter century, any consideration of the public finances, or the collective economy, would be seriously incomplete without some consideration of the fiscal systems of the state and local units of government.

It is important to note that the relative dominance of the federal government in the national fiscal scene has prevailed only over the years since World War II. A brief reference to Table 4–1 (Chapter 4) will reveal that combined state-local expenditures were larger than federal expenditures in all years (other than war periods) up until the late 1930's. In the last part of the 1930's, the two shares in total collective expenditure were roughly in balance. Since World War II, however, federal expenditure totals have tended to predominate in relative importance. But even in the postwar years, state-local expenditures have been very important, in both relative and absolute terms. Roughly speaking, the combined totals add up to more than half of federal spending, or more than one third total government spending in the United States. If federal expenditures for national security are excluded, state-local expenditure totals exceed federal nondefense expenditures.

Perhaps a more significant comparison lies in the relation of total state-local expenditures to the size of the gross national product. If interest payments are excluded, combined state-local expenditures

amount to slightly less than 10 per cent of the GNP at the present time. This is a significant proportion, and it is sufficiently indicative of the importance of the state-local fiscal systems. In absolute terms, the states and the local units of government in the United States are currently (1960) spending somewhat more than $50 billion annually, inclusive of interest payments on state-local debt. As Table 4–1 also shows, this total has been growing relatively more rapidly than federal spending since the Korean War period. There is little sign that this growth rate will be retarded over the decade of the 1960's since some of the most urgent demands for expanded government spending are currently being placed on the states and the localities, notably the municipalities. An authoritative study of fiscal trends has estimated that by the year 1970, state-local expenditures will range from a possible low of $57.9 billion to a possible high of $85.2 billion annually. An average or moderate prediction ranging between these two extremes suggests that the 1970 totals will amount to roughly $70 billion, including debt service charges.[1] These projections are based on constant prices; if inflation occurs, they will need to be revised upward accordingly.

DIVISION OF FISCAL RESPONSIBILITY BETWEEN FEDERAL AND STATE-LOCAL GOVERNMENTS

The previous discussion of federal expenditures by functional category indicated the proximate division of fiscal responsibility between the federal government and the states. The major item of federal spending is national security, a function which clearly belongs in the federal sphere of control. Related items such as expenditures for foreign aid, for aid to veterans, and for interest on the national debt are also obviously federal responsibilities. In addition, spending for generalized subsidy programs such as that for agriculture must be centrally financed. A proportionately large share of the federal expenditure budget is devoted to items which clearly must fall within central government responsibility. Relatively few federal spending programs are devoted to providing benefits that could, conceivably, be financed and administered efficiently by states and local units of government. These include portions of the labor and welfare, the natural resources, and the commerce and housing items in the federal budget.

[1]These estimates have been made by Dick Netzer in his paper, "Financial Needs and Resources over the Next Decade: State and Local Governments," which will be included in *Public Finances: Needs, Sources, and Utilization*, to be published by the National Bureau of Economic Research.

States and local units provide public services that are more closely tied to the individual beneficiary, services which affect individual recipients more directly. Table 30–1 includes a generalized breakdown of state-local spending into broad functional categories that are roughly comparable with those employed in the discussion of the federal government budget. Note that, as a general rule, state and local governments provide services that fall within the category of quasi-collective services that was discussed in Chapter 3. That is to say, few services provided by states and local units are purely collective in the sense that, say, national defense is collective. By and large, there is some aspect of private divisible benefit to be secured from public services performed by the subordinate units of government. The best example is, of course, education, which makes up the largest single item of state-local spending. Although the provision of education clearly has certain collective aspects, it also has certain privately divisible benefits which accrue directly to the individuals and families securing the services. Health and welfare services are quite similar in this respect. Highways represent a special category, which will be discussed separately in Part IX of the book.

DIVISION OF RESPONSIBILITY BETWEEN STATES AND LOCAL UNITS OF GOVERNMENT

The essential division of responsibility in a federal political structure is that drawn between the powers of the federal or central government and those of the state governments. This division of responsibility is presumably protected by constitutional provisions. Within each state there is also a second division of fiscal responsibility between the powers of the state and those of the local units,

TABLE 30-1

State-Local Expenditures by Functional Groups for Fiscal 1957 (In billions of dollars)

Education	$14.1
Highways	7.8
Health and welfare total	6.6
Other community facilities and services, total	8.6
Miscellaneous	5.4
Debt service	4.1
Total	$46.6

Source: Dick Netzer, *op. cit.* Original data taken from U.S. Bureau of the Census, *State and Local Government Finances in 1957.*

the counties, municipalities, school districts, and so on. This division of fiscal responsibility is more administrative and legislative than constitutional. All local units of government are creations of the states, which hold the residual power to destroy all units created. There is not, therefore, the same meaning to the separation of fiscal responsibility between the states and the local units as there is between the central government and the states.

The actual division of fiscal authority between the states and their subordinate units varies from state to state, and the administrative devices for coordinating state and local expenditure and tax systems are varied and diverse. Broadly speaking, the grounds for the division of fiscal responsibility here are similar to those that divide federal and state-local responsibility. The more divisible, and the more concentrated, are the benefits from the public services provided, the greater is the advantage in having the services performed by the smaller units of government. The benefits from a city sewage system, for example, accrue largely to the citizens of the city itself. Whether or not a particular city provides for a magnificant sewage system or one just adequate to its needs is normally left to the responsibility of the individual city. Residents of other subdivisions in the state are concerned relatively little by a particular city's decision on such questions. By contrast, if the individual city, county, or school district should decide to close its schools, this is a matter for concern of the whole surrounding area. Such decisions as the latter have decisive "spill-over" effects. Hence we find that states have, without exception, assumed a considerable portion of the final fiscal responsibility for financing education. Educational expenses are shared between the state and the local units, with the state normally assuming the role of insuring that certain "minimum" standards of service are satisfied in all local units.

For any particular public service there is, of course, a single most "efficient" size governmental unit. And the more or less accidental political structure that has developed does little to guarantee that existing units are of the "optimum" size, considered solely in the cost sense. Some steps have been made in recent years toward improvements in this direction, but significant further improvements seem possible. Of course, noneconomic considerations may in many cases dictate that the "optimum" size governmental unit should not be organized.

STATE-LOCAL EXPENDITURES FOR EDUCATION

It will be useful to discuss each major item of state-local expenditure separately. Expenditure for education is the most important of the group by a considerable margin. In 1957, a total of more than $14 billion out of a total outlay of almost $47 billion was devoted to the financing of education, or approximately 30 per cent of all state-local spending. Of this total, about 40 per cent, or almost $6 billion, was financed through state governments, while the remaining 60 per cent was financed through local governments. Education is financed and controlled locally by counties, cities, municipalities, townships, school districts, and perhaps several other organizational arrangements. The primary distinction among such systems is that between the independent school district, which is specifically organized to collect revenues and to finance education, and the more inclusive local governmental unit, which has several public service functions other than education to finance and control. A small fraction of educational expenditures (2 to 5 per cent) was financed from federal revenue sources, but the great bulk of these also show up in state-local totals since the federal outlays are for grants-in-aid to the states and localities.

One of the most striking of the postwar phenomena has been the rapid increase in population. Birth rates were expected to increase during the war years, but demographers predicted some slacking off in the rate of population increase in the postwar period. The predicted decrease in the rate of increase did not occur. Consequently, one of the most important changes in postwar America has been the dramatic increase in the output of children. This has placed tremendous new demands on the educational facilities of the nation, and the picture of the bulging and overcrowded classroom and the overworked and underpaid teacher became an American stereotype in the 1950's. While some aspects of this popular image result from very shrewd propaganda on the part of certain professional associations, there is no denying that the pressure on the states and the local units to expand educational expenditures has been very great. The fact that is less well known is the extent to which governmental units have responded to this need. Educational expenditures have increased very rapidly in the postwar period. Table 30–2 traces the total expenditures for education for selected years.

TABLE 30-2

Total Expenditures for Public Education
Selected Years 1939-57

Year	Total Expenditures (In billions of dollars)
1939	$ 2.4
1946	3.6
1948	5.1
1950	6.5
1952	8.1
1954	10.0
1956	12.5
1957	14.1

Source: *Financing Public School Facilities*, U.S. Department of Health, Education, and Welfare, 1959.

As the table shows, educational expenditures increased almost fourfold between 1946 and 1957. This compares with an approximate threefold increase in the remaining items of state-local spending over the same period. Perhaps a more significant measure of the relative increase in educational outlays in the postwar period lies in some comparison with the growth in national output. In 1946, educational expenditure amounted to only 1.7 per cent of GNP; by 1957 this share had increased to 3.2 per cent.

Economic Rationale of Educational Expenditure

Education belongs in the category called "quasi-collective services" in the introductory discussion of Chapter 3. That is to say, there are direct beneficiaries from any outlay on education; these are the children who are educated and the family units of which these children form a part. In this respect, educational services are divisible, and are similar to ordinary services produced in the market economy. Educational services are similar, in this sense, to automobile mechanics' services or symphony orchestra services. If this were all there were to it, educational services might be provided exclusively by private market organization and there might be no need either for government financing or for government operation.

In addition to the divisible private benefits from education, however, are important "social" benefits. That is to say, all members of the social group secure indirect advantages from having the children well educated. The benefits "spill over" from the family group to

the other members of society. If the full responsibility for "purchasing" educational services were left to the private families directly benefiting, there would be too little expenditure on education. This is because the private family would spend money only up to the point at which its own benefits equaled or exceeded the private costs. The private family directly benefited could not be expected to take into account in its decisions the spill-over benefits or advantages accruing to the society in general. In more technical terms, education provides an example in which the "social marginal productivity" of expenditure will exceed the "private marginal productivity." This fact justifies the inclusion of education as among those services that should be collectively financed; education becomes a quasi-collective service.

Public Financing and Public Operation

A distinction should always be made between the public or collective financing of a particular service and the public or governmental provision of the service through its own facilities. Education provides an excellent case study of a rather complete failure to make this distinction. The divergence between private interest and the social interest discussed previously provides an irrefutable argument in support of some governmental financing of educational services. It provides no argument for or against public operation of educational institutions as such. The question as to the comparative efficiency of publicly operated and privately operated educational institutions is quite a separate matter which must be discussed on altogether different grounds. In many cases, the services will be such that direct public operation may be the most efficient means of providing them. In other cases, public financing with private operation may be more efficient.

In order to illustrate this important distinction, let us refer briefly to a noneducational example. Suppose that the residents of a small community own a lake in common. The lake requires dredging every spring, and, since the lake is commonly owned, this must be done on a collective basis. But it is clear that the community would be rather foolish in this case to purchase a "public dredge" for the springtime operation alone and keep it idle all of the rest of the year. Obviously, the more efficient system will be that of hiring or leasing the dredge for the period of time needed each spring. Public financing but private operation of the dredge is the more desirable alternative.

This distinction between public financing and public operation is of some importance in relation to the educational problem because popular opinion has seemed to accept public operation as well as public financing as being essential. The public school system is rarely subjected to question in terms of its comparative efficiency with an alternative publicly financed but privately operated system. Many noneconomic considerations again enter into the choice here; but on *a priori* grounds there is no clear reason why privately operated schools should be less efficient than publicly operated schools. Perhaps it is sufficient at this point to indicate only that the argument for public support for public financing should never have been extended to apply to direct public provision of the service, whether this be education, garbage collection, hospital services, or any other quasi-collective service.

Economic Effects of Public Financing of Educational Services

The fiscal process exerts important economic effects on the benefits or spending side of the budget as well as on the tax side. A thorough analysis requires that the economic effects of the separate types of public spending be examined. The first point to be made concerns the inherent difficulty which the government must surmount when it tries to "give away," that is, to provide publicly, any services which are divisible, or partially so. If a service is purely "collective" in the sense defined in Chapter 3, no problem arises. But if the service has both "private" and "collective" elements, certain conditions must be met before government provision of the service can be carried out efficiently.

If a service is financed through the taxing process, the benefits are normally divorced from the "prices" paid for the service in taxation. The individual who enjoys the benefits does not take into account, in his marginal decisions concerning consumption of the service, the added taxation that may be required to finance additional increments. This suggests that, for those services which do, in part, provide divisible benefits to particular individuals and groups, "free" public provision could lead to a gross overinvestment of public resources under certain conditions. If those benefited should be able to expand their consumption substantially as a result of the "free" provision of the service, large amounts of resources would have to be devoted to supply the demands. The necessary condition which must be satisfied for public provision of a service of this nature is that

the elasticity of demand must be near zero over the range between a positive price and a zero price. Governmental units cannot efficiently provide "free" services, the demand for which is relatively elastic over such ranges.

Education fits the inelastic demand case reasonably well; therefore, it is a suitable quasi-collective service for governmental support without the necessity of supplementary private pricing. This point can perhaps be clarified by looking at the nature of the demand for education. Cultural and institutional patterns of behavior in society dictate that all children between roughly the ages of six and eighteen attend schools. A family with three children will "consume" thirty-six years of educational services. If the services are provided freely through public support, there will be no consumption beyond the thirty-six years. If the services can be standardized in terms of quality, the government can provide these freely without great wastage of economic resources.

This case may be contrasted with government attempts to provide, say, water without charge to all residents. If water is provided free, many individuals will use additional water to the point where the incremental return reaches zero. The result will be a great wastage of water, which is, in most places, a scarce resource costing taxpayers something. An overinvestment in water supply will take place unless private consumption is directly restricted by a price placed on its usage. The demand for water is reasonably elastic, while that for education is reasonably inelastic over the relevant price range.

The sharp dichotomy drawn here should not, however, be pushed to extremes. The demand for educational services surely has some elasticity, and the provision of "free" public schools exerts an effect toward causing individual families to consume more resources than they would consume if some price were to be charged. As suggested previously, the charging of full-cost pricing would result in too little investment in education. But some introduction of private pricing might lead to a more efficient over-all allocation of resources. Given the social pattern of school attendance, the extra consumption of school services that is stimulated through the policy of zero price takes the form of added demands for improved facilities, higher-quality instruction, more varied offerings, and so forth. To a certain extent, local political units must respond to such demands. Hence, the conclusion must be drawn that the support of educational services by the governmental unit leads to some added consumption of such services, although the social wastage in this case may not be serious.

As a matter of fact, popular opinion seems inclined toward the opposing view. It is commonly argued that inadequate attention has been paid to the "social" benefits to be gained from educational expenditure, and that, as a result, society has failed to invest a sufficient share of its resources in this activity. Social waste is said to occur because there is too little, rather than too much, investment in the provision of educational services. It is extremely difficult to develop any suitable means of measuring or testing the validity of these, or the opposing, arguments. To do so one must examine the extent to which political processes, as they are currently organized, respond to the demands of citizens for public services and for reduced taxation.

The second view, that there has been underinvestment in the provision of educational services, stems, in part at least, from conceiving of education as a form of investment, rather than as a form of consumption. Education clearly represents investment in the human being as an asset; the person who is educated becomes a more productive member of the social group, whether productivity is measured purely in economic terms or in a more general way. The increased productivity resulting from educational investment in a human being will be partially enjoyed by the individual himself, and partially it will "spill over" to the social group. This point has been discussed before. But when the investment approach to education is taken, a supplementary reason for public support appears. Even if the spill-over or external effects of educational investment are neglected, private persons might not invest a sufficient amount in education. This is because the individuals who stand to gain the most privately from the increased productivity that education can insure do not have access to adequate markets for loan capital with which investment might be financed.

This point can perhaps best be illustrated by a brief analysis of higher education. The divergence between the private marginal productivity and the social marginal productivity of investment in education decreases as the stage of education is advanced. For education beyond the high school level, there is some question as to the extent of this divergence. For present purposes, let us assume that the benefits from higher education accrue largely to the individuals who are educated, not to society as a whole. The argument for public support of education that was discussed previously would not hold under these assumptions. If the benefits from additional higher education accrue solely to individuals, that is to say, if the

benefits are wholly divisible, the private market economy might be expected to organize higher education effectively. But this result might not be produced under current institutional conditions. The individual student may recognize that his future earnings stream may be increased by additional education, and this increase may be more than enough to offset the current cost of undertaking the additional investment required. But the student, or prospective student, may not have sufficient funds available. Normally, in analogous cases in the private economy, the capital market can always be resorted to as a source of loan funds for productive investments. The prospective student may not, however, be able to borrow from the capital market despite the long-range productivity of investment in education. The real difficulty here is not in the imperfection of the capital market as such; the trouble lies rather in the fact that the individual person cannot legally consider himself, his own person, as a capital asset for purposes of providing collateral for loans. The prospective lender cannot secure a wholly valid legal claim against the person of the student in exchange for lending the required funds. This makes the problem of investing in education somewhat different from that of ordinary investment. It may make necessary particular governmental action in the direction of opening up sources of loan funds to prospective individual beneficiaries.

As the postwar flood of children reaches college age in the early 1960's, the demands that will be placed on the nation's publicly supported colleges and universities will increase sharply. As a result, it seems quite probable that efforts will be made to shift public support of higher education more in the direction of providing some guarantees of loan funds to individual students and other similar plans. As with the management of the national debt, the financial problems involved in higher education and the public support thereof offer wide opportunities for imaginative efforts at innovation during the decades immediately ahead.

Federal Government Support of Educational Expenditures

As noted, the provision of financial support for educational services has traditionally been a function of the states and the local units of government. The federal government's share in the total support for education has been relatively small, and this has been highly specialized. Most of the federal support has, in the past, been provided through grants-in-aid made to states and local units in promotion of particular educational programs. For example, federal

aid to vocational education, notably for agricultural training at the nation's land-grant colleges and universities, has been provided for a long period. The federal government has also provided supplementary funds to states and local units whose school needs were increased by federal defense installations in the World War II and postwar period. The National Defense Education Act of 1958 expanded the federal role in financial support for higher education by providing for certain graduate fellowships, student loan funds, and college housing programs.

Despite recurrent demands on the federal government for a large-scale program of financial support for the educational function at all levels, action in this direction has not been taken. Should the federal government assume a share of the national responsibility for the financing of education? Most of the proposals that have been made include federal financing only; actual operation of the programs by the federal government has rarely been suggested. The answer to the basic question depends on factors that are not clearly measurable. In the first place, the extent of the "national" interest in education, as opposed to state interest, is not clear. The fact that significant numbers of children educated in some states migrate and spend their working adult lives in other states provides some support for a federal interest in insuring that a minimum standard of educational services be provided in all states. But do states already provide a sufficiently acceptable standard? Again this seems almost impossible to measure. States differ widely in fiscal capacity; the poorer states, therefore, must tax local citizens more heavily to provide the same level of public services. Does this disparity in fiscal capacity provide some reason for federal grants-in-aid to the poorer states in support of education? This question will be discussed again in Chapter 35, but it is raised here for completeness. Against these arguments which point in the direction of some federal support must be put the following: Is federal financial aid without federal control a real alternative? Would not federal control introduce, almost by necessity, gross inefficiency in the provision of educational services? Does not the need to impose some limitations on the size, scope, and functions of the national or central government overweigh all particular demands for extension of its activity? No answers need be provided to these questions here. Different individuals will reach different conclusions about federal aid to education. But this question will surely continue to be an important public issue in the United States for some years to come.

STATE-LOCAL EXPENDITURES FOR HIGHWAYS

Expenditures for highway, road, and street construction and maintenance are second in quantitative importance to education in state-local fiscal systems. As Table 30–1 shows, almost $8 billion was devoted to these purposes in fiscal 1957, and this total will increase rapidly over the decade of the 1960's, especially when it is noted that the totals include the large-scale federal aid for the construction of the Interstate Highway System.

The highway function provides an excellent case study of the public provision of what is essentially a privately enjoyed or divisible service. For this reason, we shall defer discussion of this function until Chapter 38.

STATE-LOCAL EXPENDITURES FOR HEALTH AND WELFARE

In 1957, the last year for which data are currently (1960) available, states and local units of government spent about $6.6 billion for health and welfare. The two major items in this broadly inclusive category are *public assistance* and *public hospitals.*

Public Assistance

Total outpayments made by states and local governments for public assistance amounted to approximately $2.8 billion in the 1957 fiscal year. More than half of this total was financed by the federal government and transferred to the states through federal grants-in-aid. About one third was financed by the state governments, and the remaining share by the local units. Public assistance, as a functional category, includes the provision of old-age assistance payments to those aged people who are not eligible for benefits under the social security programs and who have neither private pensions nor real assets, financial aid to dependent children of the needy, financial aid to the blind, and financial assistance to those individuals who are permanently disabled.

The most important of these programs, in terms of funds expended, is the provision of old-age assistance payments, which makes up more than half of the total expenditures included under public assistance. For this program, as well as for aid to the blind and the disabled, the federal government, through the grant-in-aid device, sets the standards for the states to follow. For example, the federal government currently (1960) provides four fifths of the first $30 per month payment per recipient in all states. For all payments of more

than $30 per month, the federal government varies its percentag contribution from 50 to 65 per cent, depending on the average incom level of the state. In this way, the federal government insures, almos fully, that each state will provide payments up to the minimum of $3 monthly for qualified recipients. This is perhaps the best singl example of federal financial aid to the states being used to encourag states to establish a certain minimum standard of payments.

The expenditures for old-age assistance should not increase sul stantially over the next decades. This is because more and mor of the aged who would otherwise be eligible for this program wil now be covered adequately by the social security system. It seem possible that total payments for old-age assistance may actually b reduced by 1970.

Substantially all expenditures included under public assistanc are transfer expenditures. That is to say, no public services as suc are provided. Payments are made directly in money to the eligibl recipients. As previously discussed, transfer expenditures exert some what less extensive economic effects than so-called "productive" expenditures which involve direct governmental purchases of eithe resources or final goods and services. Individual choices are modifie to a lesser degree with direct payments of money than with fre provision of particular goods and services.

Public assistance expenditures do not fit neatly into the classi fication of collective goods, quasi-collective goods, and private good publicly provided that was set up in Chapter 3. Public assistanc payments clearly benefit individuals directly, as private individuals These benefits are wholly divisible, and individual shares can b readily calculated. The collective aspects of these payments ste from the external effects on citizens as a group arising from the relie of poverty and misery in the society. The relief of poverty is genuine "social" or "collective" objective that can be met, in par at least, through the transfer process facilitated by the fiscal system Through the fiscal process, individuals as taxpayers can transfer fund to individuals as eligible recipients. This transfer process become supplementary to the set of private transfers which is represented b the many private charities. In one sense, private charities are als facilitated by the fiscal process. The deductibility of contributions t charitable organizations for federal income tax calculations provide a strong fiscal incentive for the furtherance of private relief of pov erty. In some measure, therefore, this deduction reduces the necessit for the more direct transfers which public assistance payment represent.

Public assistance payments are deliberately aimed at modifying the distributive results which the market economy produces, even the posttax results. These payments embody a social recognition that those who are not able to contribute sufficiently to national production to earn privately what society at large considers to be a "minimum" living requirement should be helped directly. These payments are almost purely redistributive in effect.

If substantial economic growth can be sustained in the American economy, if the nation can become more affluent, the need for relief of poverty through the taxing-transfer payment process should be reduced, provided that such need could ever be measured in any absolute way. But the old adage that "the poor are always with us" remains true, since poverty is normally thought of only in relative and not absolute terms. Given any conceivable income distribution, regardless of the size of the average income, there will always be individuals at the lowest end of the income scale. And social values will tend to support direct fiscal action to improve the relative position of these "poor." Therefore, despite the possibility of emerging affluence in American society, we cannot predict with great confidence substantial long-range elimination of public assistance programs.

The economic effects of public assistance programs are relatively easy to trace. Insofar as individuals receive direct income subsidies from government, there will be some net reduction in their incentives to earn incomes in the private market economy, and to put aside earned incomes for provision of retirement support. The direction of such effects cannot be denied, although it is extremely difficult to estimate the extent to which behavior is actually modified. Public assistance payments to those individuals who are wholly incapable of earning income in the private economy do not have this direct effect, of course. But the "pre-welfare-state" means of treating such individuals was some provision from family sources. In one sense, the governmental unit has replaced the family in its acceptance of responsibility for the indigent. Family responsibility and solidarity has been weakened by this change, along with many other changes, in the past half century. Whether this is viewed as good or bad depends upon individual value judgments.

Public Hospitals

In the fiscal year 1957, almost $2.5 billion was spent by states and local units of government on the construction, operation, and maintenance of public hospital facilities. The major share of this expenditure was made by local units of government, cities, counties,

and towns, although some federal financial aid was provided, especially for hospital construction.

Expenditures for hospital operation may be contrasted with those for public assistance in that they involve the direct provision of a service rather than a transfer payment. The object of the public provision of hospital care is not, therefore, simply that of relieving poverty. The object is that of insuring that a specific service, adequate medical and hospital care, is made available to all citizens. In other words, the "free" provision of hospital care to those individuals who cannot afford private facilities produces spill-over benefits to the community at large; the services provided are essentially quasi-collective in terms of our earlier classification.

Public hospital services may also be contrasted with public educational services in a different way. Whereas United States experience has included the provision of "free" public education to most children of the nation, with privately financed education being the exception rather than the rule, this has not been true as regards public medical care and hospital services. In the latter case, privately financed medical care and privately financed and privately supplied hospital services have been the normal order of affairs. Public or collective provision of these services has traditionally been extended only to those who have been considered to be unable financially to bear the full costs of treatment. Thus, public education in the United States has never been primarily considered to be redistributional in effect, while the "free" public provision of medical care, clinics, and hospitals has been included directly as a part of the over-all "social services" with strongly redistributionist overtones. In Great Britain in the postwar period, all medical care and hospital services have been provided at near-zero "prices," with the services financed from general tax revenues. Great Britain has chosen to define medical care as a quasi-collective service to the full extent; the United States has chosen to leave this service primarily to the market economy, although the quasi-collective nature has been acknowledged by the provision of care to those financially unable to purchase services in the market.

The financing of medical and hospital care seems likely to continue to be an important area of discussion and debate over future years. Two factors, the gradual aging of the population and the increased population itself, are certain to place greater demands on the available facilities. This increased demand, when combined with somewhat arbitrary and monopolistic restrictive practices on the part

of certain professional groups supplying medical services, will insure that the average prices of medical services continue to rise rapidly. The acknowledged quasi-collective nature of the industry suggests that the line between a pure market organization, privately financed and privately operated; a mixed organization, privately and publicly financed and privately and publicly operated; and a collective organization, publicly financed and publicly operated ("socialized medicine"), will rarely be clearly and definitely drawn.

COMMUNITY FACILITIES AND SERVICES

This broad, inclusive category makes up about one fifth of total state-local expenditures. It is upon the services included in this category that the greatest demands for expansion are likely to arise. The separate items included are those public services normally associated with urbanization, and the great bulk of these services are provided by local units of government.

The services are of two distinct classifications. First of all are services which are genuinely collective in the sense described in Chapter 3, but which are collective only to the limited geographic area. The indivisibility of benefits extends only to the boundaries of the individual local unit of government. Secondly are many services which are primarily private in terms of benefits provided. These fit the classification of private goods publicly provided. Almost every one of these services has some collective aspects, but the reason for governmental provision is to be found elsewhere. These are really "public utilities" in the traditional sense of this term. Such services as the provision of water, sewage disposal, transit facilities, electric and gas distribution systems, and even roads and streets, can be included under this "public utility" classification. Problems raised by government provision of these services are sufficiently distinct to warrant treatment in a special section of this book. Therefore, discussion will be deferred at this point.

Among the services that are genuinely collective, but which are limited in geographic coverage, police and fire protection are the clearest cases. The location of the fire house and fire company within the ward of the city benefits citizens who are residents of that ward indivisibly. That is to say, the protection of one house does not reduce the protection of another house within the same ward. Individual protection against fire is, of course, possible, but, due to this indivisibility, collective organization to provide fire protection is far more efficient as a method of organization. This collective organization

could, of course, be voluntarily introduced, as witness the many volunteer fire departments in newly developed villages. But, as a general rule, collective action implies action through the fiscal process of the local government unit with the services financed out of general tax revenues.

Parks and recreational facilities are further examples of facilities which are collective. There are clearly divisible benefits from such facilities, however, and the demand for their services is evidently elastic. Therefore, public financing of recreational facilities may have to be supplemented by some direct pricing of the services to prevent undue congestion and overcrowding in highly urbanized areas.

An item that is becoming increasingly important within the broad category of community facilities is housing and community redevelopment. Urban "blight" is rapidly coming to command attention as a major social problem, in the larger metropolitan areas especially, and the action that is taken to remove or correct this situation tends to proceed through the public authorities and by way of the fiscal process. Some federal government aid is provided for both housing projects and urban and community redevelopment projects.

To be justified on economic grounds, urban and community redevelopment, or public housing generally, must be shown to be a quasi-collective service. It seems clear that the primary beneficiaries of public housing are those who are to be provided with housing services at prices lower than the private market economy would otherwise provide. But spill-over or external benefits accrue to the community at large from public housing and blight clearance programs. The slum areas are held to be breeding places for crime and juvenile delinquency. Insofar as these spill-over effects are significant, some case can be made for such programs of public expenditure. It should be noted that the arguments in support of such programs cannot be made primarily on redistributionist grounds. If the aim of urban renewal and housing developments is that of aiding the poor, of increasing their real income levels, this objective could be better accomplished by the simple process of providing the poor with income transfers, which they may or may not choose to spend for better housing. The argument for public support of housing must rest, basically, on the significance of the external costs imposed on society generally by the existence of "undesirable" and "inadequate" living accommodations. As in so many similar cases, the final attitude on such expenditures rests on individual value judgments.

MISCELLANEOUS EXPENDITURES

Note that Table 30–1 includes a sizable category labeled only as "miscellaneous." This includes the expenditures made by states and local units for what are essentially nonprogram activities. That is to say, included here are all the costs of operating the governmental processes themselves. The costs of state and local administration, of the legislative and judicial system, and of other like items are included here.

DEBT SERVICE

The principles of debt issue for states and local units of government are the same as those discussed in Chapter 27. The only difference between state-local debt and national debt is that state-local units do not have access to money creation; they must therefore issue real or genuine public debt. They have no opportunity to issue currency disguised as "debt."

The total state-local debt outstanding at the end of 1957 has been estimated to be approximately $53 billion. For rough comparative purposes, this is noted to be somewhat larger than the annual rate of state-local expenditures, including debt service and amortization. The total outlay for debt service for fiscal 1957, shown as $4.1 billion in Table 30–1, includes interest on the outstanding debt plus retirement of maturing issues that were not refunded. The interest charges alone would, of course, be considerably lower than this amount.

Tax Exemption of Interest on State-Local Securities

The one feature of state-local issue that seems worthy of note is the fact that the receipt of interest on state-local securities is specifically exempt from federal income taxation. This places a differential premium on the ownership of state-local debt instruments, especially for the higher-income groups, and allows states and local units of government to market securities at differentially favorable rates. As a result, yields on reasonably secure state and local issues normally fall below yields on federal government securities, which are fully taxable.

CONCLUSIONS

State-local fiscal systems are an important part of the over-all pattern of "public finance" in the United States. Up until World War

II, the combined impact of state-local systems on the economy wa larger than that of the federal system, and even currently the state local expenditure totals exceed federal expenditures if national secu rity outlays are excluded.

The division of fiscal responsibility between the federal govern ment and the subordinate units is reasonably clear cut. States anc local units provide services which are more concentrated geographi cally and which are closer to the economy of the private citizen. A significant number of services provided by states and local govern ments, especially the latter, are of a quasi-collective nature. They provide certain divisible individual or private benefits in addition to the collective benefits accruing to the whole social group.

Expenditures for education are the most important for states and localities. These are followed by those for highways, for public assistance, for public hospitals, and for community facilities generally. Almost any one of the separate items included in state-local expenditure programs raises many problems of interesting and important economic content. In many cases, the extent of collective interest is highly debatable, and this is subject to no fully acceptable measurement process.

The expenditures made by states and local units are expected to increase quite rapidly over the next decade. Since the Korean War these expenditures have been increasing at a substantially greater rate than federal expenditures, and, unless the Cold War picture is drastically altered, this disproportionate rate of increase seems likely to continue. The reason for this is that the demands for collective services arising from the increasing size of the population and the increasing urbanization of the country are largely concentrated on services traditionally and properly falling within the functions of states and local units of government.

SUPPLEMENTARY READING

Reference has been made in the text to the careful and interesting projections made by Dick Netzer. For detailed figures on the composition of state-local expenditures, the student is advised to refer directly to the *1957 Census of Governments*, issued by the U.S. Bureau of the Census.

Chapter 31

STATE-LOCAL GENERAL REVENUE SOURCES: SPECIFIC EXCISE TAXATION

The states and local governments finance public services from revenues drawn from a wide variety of sources. An important part of local government activity is devoted to providing services which fall within a general category called "public utilities." To a large extent, these services are financed from charges levied on users of the services directly. These revenues cannot legitimately be classified as "taxes." In a broad sense, the maintenance of the highway and street system is a "public utility," and this system is financed almost wholly from charges placed on highway users. The issues involved in public utility financing and operation will be discussed in Chapter 37. Revenues from user charges, including highway taxes, will not be discussed here.

A second revenue source for states and local governments which may be discussed briefly at this point is the unemployment compensation tax. This tax, in the several states, is levied on employers and the proceeds are earmarked for a trust fund account maintained by the state. Expenditures from this trust fund account are devoted exclusively to financing unemployment compensation payments to qualified workers during periods when they are unemployed and meet the required conditions of eligibility. The federal government, through a system of grants-in-aid, finances the administration of the unemployment compensation program. In periods of recession such as 1958, when state trust fund accounts were threatened, the federal government may provide financial supplements to state funds to allow some extension of benefits. In its broad outlines and in its economic effects, the unemployment compensation program is similar to the social security program. It is questionable whether the program should be discussed as a state or as a federal program since federal

government encouragement and support is so closely involved in the whole organization.

GENERAL REVENUE

User charges and unemployment taxes were mentioned briefly with a view to eliminating them from further discussion in this chapter. The subsequent discussion will include only tax sources of general revenues for states and the local units of government. General revenues are those which are devoted to the financing of general-purpose state and local expenditures. Table 31–1 provides some rough indication of the relative importance of the separate taxes employed to produce general revenues.

It should be noted that general tax revenues, as here classified, make up only about half of the combined state-local revenues from all sources. Public utility revenues, including highway user charges, unemployment compensation taxes, and intergovernmental transfers make up the three important supplementary sources which must be added to general tax revenues to secure over-all revenue totals.

Property taxes are the predominant source of general revenues for the combined state-local systems, and this source is used primarily by the local units. Chapter 34 will be devoted exclusively to a consideration of some of the problems arising in the taxation of real property.

TABLE 31-1

Sources of General Revenue—State-Local Fiscal Systems, Fiscal Year 1957

Revenue Source	*Amount (In billions)*
Property taxes	$12.9
General sales and gross receipts taxes	4.3
Tobacco taxes	0.6
Liquor taxes and liquor stores	1.6
Individual income taxes	1.8
Corporation income taxes	1.0
Death and gift taxes	0.3
Severance taxes	0.4
Miscellaneous taxes	1.8
Total	$24.7

Source: *Facts and Figures on Government Finance, 1958-1959* (10th ed.; Tax Foundation, 1958).

The most important source of general revenues for state governments is the taxation of general sales. This revenue source will be fully discussed in Chapter 32.

In this chapter two of the most important remaining sources of general revenues for states and local units will be discussed briefly. Particular emphasis will be placed on specific excise taxes, exemplified by the taxation of liquor and tobacco products.

STATE AND LOCAL INCOME TAXATION

In sharp contrast with the federal revenue system, income taxation is relatively unimportant in the combined state-local system in the United States. Both individual and corporation income taxation produce only slightly more than one tenth of the general revenues of states and local units. Income taxation is understandably a much more suitable revenue source for states than for local units of government.

Thirty-one states currently (1960) levy taxes on individual incomes; thirty-three states levy taxes on corporation incomes. Rates for both the personal income taxes and the corporation income taxes tend to be rather low, and for the same reason. The freedom of migration for both human and nonhuman resources across state boundaries tends to insure that state governments will impose relatively low rates of tax on incomes. Any attempt by a single state, or by a single group of states, to impose differentially high rates would cause some outmigration of resources to the low-rate states. This over-all reduction in the taxpaying capacity of a state will seem undesirable to state citizens and steps will have to be taken to prevent this if possible. If a state does not levy an income tax, it must, of course, either levy some substitute form of taxation or reduce public outlays. The impact of the income tax is, however, the most direct of all taxes; and individuals may respond directly to an income tax differential while at the same time they would remain unaffected by an even more onerous burden of either an indirect tax or a deficiency in public services.

State rates of tax on individual incomes begin at around 1 to 3 per cent on taxable income. Taxable income is calculated after allowable deductions and exemptions in a manner roughly similar in most states to that followed under the federal income tax. These rates move upward with increasing incomes to a median maximum marginal rate of 6 per cent. The highest marginal rate rarely goes as high

as 10 per cent. The state income tax is, therefore, only slightly progressive.

State taxes on corporation income tend to be proportional at relatively low rates, roughly 3 to 6 per cent. A few states include a single step rate to introduce some measure of progression.

A few states, notably Ohio and Pennsylvania, allow municipal governments to impose taxes on personal incomes. These taxes are normally proportional and are levied at very low rates, rarely exceeding 1 per cent. They tend to be based on gross incomes rather than net incomes.

Perhaps the most important single problem arising from the administration of state income taxes, and even more acutely from local income taxes, lies in the inherent conflict between taxation on the basis of residence or domicile of the taxpayer and taxation on the basis of situs or place where income is earned. An individual may be a resident of one state, but he may earn all or a part of his personal income in other states. To which state should he be liable for an income tax, the state of domicile or the state where the income is earned? Or should the income be subjected to double taxation, as it would be in certain cases? This problem has never been satisfactorily solved, and it is very important in certain of the large metropolitan areas of the nation where urban commuting patterns allow many individuals to live in state jurisdictions other than those in which they earn the bulk of their incomes. If either the earning pattern or the residential pattern were roughly equivalent in the several states, consistent adherence to either conception of tax liability would produce satisfactory results. But when one state, for example, New York, contains a proportionately high share of income sources, while another state, for example, Connecticut, contains a proportionately larger share of domiciles, conflict will not be easily resolved, and double taxation of some individuals will normally result. New York will find it highly advantageous to impose taxation on the basis of situs whereas Connecticut may find it advantageous to tax its residents on their income received regardless of place of origin.

These problems are sufficiently difficult with personal income taxation. They are even more difficult to resolve satisfactorily with the taxation of corporate income. Many corporations are, of course, organized to conduct business in several states. It is very difficult to separate the net income earned in one state from that earned in another state. Given the differences in state laws determining the allocability of income earned, the corporation may be subjected to

double taxation in some cases and may escape liability on certain parts of income in other cases. The solution reached in any case must be somewhat arbitrary at best.

The fundamental deficiency with state and local taxation of income lies in the fact that this represents an attempt to tax incomes earned in the whole national economy by units of government which are smaller, geographically, than this economy. This geographic limitation of fiscal authority gives rise to both the problem of interstate competition for resources mentioned previously and the inherent conflict between the situs and domicile bases of income taxation. Partly for these reasons, and partly for reason of the more general desirability of maintaining some separation of tax sources in a genuinely federal political structure, many students of fiscal theory and practice argue that the taxation of income, both personal and corporate, should be left primarily to the federal government. States and local units should not employ this revenue source to any great extent, but should, instead, rely more heavily on indirect taxes and taxes on property. This argument has much to commend it, especially when the over-all fiscal system of both the central government and the state-local units is examined. The argument in support of more extensive use of income taxation by states and local units seems less convincing. This is usually based on the regressive nature of indirect taxes and on the greater revenue productivity of income taxes.

SPECIFIC EXCISE TAXES: SUMPTUARY AND REGULATORY

Taxes that are imposed on the act of producing, distributing, selling, or consuming particular products and services are important revenue producers for states and local governments despite the fact that these taxes have been overshadowed in recent decades by taxes on general sales. Income taxes, property taxes, and general sales taxes are accepted widely as belonging to the category of taxes appropriate to the financing of general-purpose expenditures; these are "general" taxes in intent if not in effect. By contrast, the most important feature of the specific tax is its lack of generality; it must be recognized as being discriminatory. Therefore, something other than the mere revenue needs of governmental units must be employed in support of the singling out of a particular product or service for taxation. Why should either the producers, the processors, or the consumers of this or that product be discriminated against by the fiscal system?

The set of specific excise taxes is interesting primarily because it does represent the attempts to employ the fiscal process for pur-

poses other than that of raising revenue. To attempt to use the taxing process for nonrevenue purposes suggests the acceptance of some theory of the results or effects of the tax. As will be seen, these taxes do present a certain popular image to the public at large which, correct or incorrect, is widely accepted in discussion. These specific excise taxes are not, of course, designed purely for nonrevenue purposes. In certain instances, revenue-producing aspects loom as very important, notably when an issue has been raised concerning the possible removal of one of the existing taxes. On the other hand, taxes such as these could rarely, if ever, be approved initially were it not for the nonrevenue aspects present. Governments will not readily impose a discriminatory tax deliberately without cause.

Broadly speaking, there seem to be two general reasons why governments single out particular commodities and services for the purpose of levying specific taxes. A tax may be imposed for *sumptuary* or for *regulatory* reasons, although this separation between these two is not entirely distinct. A sumptuary tax is defined as a tax the effects of which are held to be desirable on moral or ethical grounds. As suggested previously, the support of a tax for this reason must assume that these effects are roughly predictable. In the sumptuary tax, a majority of a legislative assembly expresses its belief that the consumption of certain products or services should be discouraged. Thus, the implied assumption in all sumptuary taxes is that the imposition of a tax will, in fact, discourage the consumption of the product or the use of the service.

The obvious examples of sumptuary taxation are the levies placed on the production, sale, or consumption of tobacco products and alcoholic beverages by the federal government, the states, and the localities. As Table 31–1 shows, these taxes are important revenue producers for the state-local systems. To these most familiar examples must be added those taxes on such things as playing cards, billiard tables, soft drinks, cartridges, cabaret admissions, and many other products and services which are to be found in one or more of the state revenue systems.

The citizens of a governmental unit, acting collectively through the legislative process, may try to prohibit or discourage the consumption of a particular product or service in two separate ways. First, they may approve legal regulations that prohibit the sale and use of the product directly. Thus, we find various laws, state and local, that prohibit the sale of narcotics, the sale of alcohol to minors, the sale of fireworks, and so on. Laws such as these will normally be

used only when the predominant majority of the citizens consider the consumption of the item in question undesirable.

The second method of sumptuary regulation is that of utilizing the taxing process as a supplement to the ordinary market process. Rather than impose a direct prohibition on the sale of fireworks, for example, a city government may levy such a high tax on the sale of fireworks that the end result is achieved. No revenue would be produced by a fully effective sumptuary tax such as this, but the regulatory purpose would be accomplished. Normally, however, the taxing device is employed only where no overwhelming consensus exists in support of direct prohibition of consumption. Certain groups in the society may desire to see consumption outlawed, but their numbers are not sufficient to superimpose their own desires on other citizens who desire no restriction on the consumption of the product in question. It is in situations such as this that the tax offers a satisfactory means of reaching what may genuinely be called a social compromise. The tax can be imposed in such a way as to discourage consumption without eliminating it. The voluntary purchase of the commodity can be allowed to continue on the assurance that those individuals who do consume will be forced to pay a differentially high price for this privilege. In a very general sense, this seems to offer an explanation of the relative stability in social attitudes toward liquor consumption in the United States during the last quarter century. Direct prohibition was tried and failed because there was not sufficient public support for the restriction on individual choice that the prohibition embodied. Prohibition was repealed, but in its stead voluntary consumption was allowed only after very high federal and state taxes were imposed.

Gambling provides an interesting example of an activity that is treated in different ways by the different states. In many states, all forms of gambling activity are legally prohibited; the taxing process is not utilized. In other states, gambling activity is legalized in certain specific forms, but heavy taxes are imposed on the consumption of risk by individual citizens. The pari-mutuel horse and dog tracks are the obvious illustrations of this approach. Nevada offers the example of the state which has widened the range of legalized gambling to include many other forms, and with this extension has come the increasing productivity of this sumptuary revenue source.

The second nonrevenue purpose of specific excise taxation may be regulatory rather than sumptuary. Sumptuary taxation is desired because it is regulatory, but the converse need not hold true. There

are taxes which have as a direct purpose some reduction of consumption of particular goods but which do not imply any moral or ethical condemnation of the consumption activity. The best single example of this sort of tax is that imposed on the sale of oleomargarine in several states. Taxes levied on chain store sales provide a second good illustration.

Taxes such as these are likely to be imposed as a means of protecting state and local industries against the competition of products imported from other states in the national economy. This is obviously true of oleomargarine taxes; the taxes were introduced because of the political influence of dairy interests. Any state or local tax designed to serve primarily as a regulatory device to protect domestic industry is on the margin of constitutionality. This fact serves to explain why such protective taxes have not been more prevalent in state-local systems. The Constitution of the United States prevents states and local units of government from interfering directly with the freedom of commerce across state boundaries in the nation. One of the reasons for the rapid growth and the high-level productivity of the American economy lies in the extent of the free trade area encompassed by the several states. If the separate states and localities were to be allowed to accomplish through taxation what they could not accomplish directly this great advantage would be lost. For the most part, such protective taxes are undesirable, not only for the whole nation, but for the interest of the states themselves. The attempts to impose protective taxation, as a substitute for protective tariffs, tends to be motivated by narrowly partisan interests. State fair-trade laws, state unfair-practices acts, and many state and local licensing arrangements and regulations are undesirable for the same reasons, and these are perhaps considerably more serious barriers to interstate and interregional freedom of trade than are state and local protective taxes.

SPECIFIC EXCISE TAXATION: ECONOMIC EFFECTS

The taxation of the sale or consumption of a single commodity or service provides the fiscal theorist with his best opportunity to apply the partial equilibrium approach to economic theory, an approach that was developed by Alfred Marshall. As Marshall himself suggested, almost all of the important principles of economics can be illustrated through the use of the tax device. As suggested earlier, much of the support for specific excise taxation is based on a presumed knowledge of its effects. Careful analysis tends to provide some verification of this popular image in a single case, although this

is perhaps the most important of the several cases that will be discussed.

Competitive Conditions—Constant Cost Industry

We shall first examine carefully the one case in which the popular image of the tax is verified. This is where the tax is imposed on the product of a competitive industry that is small in relation to the total economy and which employs no permanently specialized resources. After all adjustments to the tax have been made, the price to the consumer will rise by the full amount of the tax. The final incidence of the tax will rest exclusively with the consumers of the product, and the quantity consumed will be reduced to the extent caused by the tax-induced price increase.

To understand fully the process through which these conclusions are reached, an analytical model must be introduced and the effects must be traced out step by step. Let us assume initially that the industry under consideration is fully competitive and is in a position of long-run equilibrium before the imposition of the tax. This assumption implies that several conditions must be satisfied. First, there are sufficient firms in the industry to insure that no single firm has any appreciable influence over the market price of the product. Second, each firm in the industry is producing at its most efficient scale of operations, and the firm is making normal returns on its capital investment. There is no incentive for capital investment in the industry to be either reduced or increased. Third, the price to the consumer is equal to the average cost of production, including in this cost the normal rate of return on investment. Fourth, the price to the consumer is also equal to the marginal cost of production for all firms.

For purposes of simplifying the analysis, we assume that each firm sells its product directly to consumers, and that the products are sold immediately after they are produced.

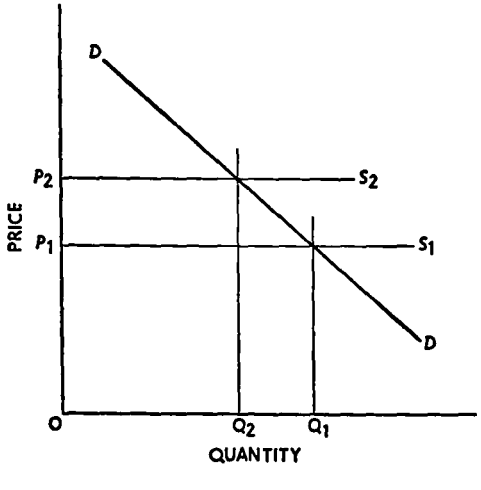
We now impose a tax on the sale of the commodity produced by this industry. The tax is defined as a fixed amount per unit of product; the results would be identical if we assume that the tax is levied in terms of a fixed percentage of market price. The total tax must be paid to the tax collector by the producing firms.

The initial impact of this tax on the firm will be identical with an increase in both marginal and average cost. In order to produce and sell a unit of the commodity, the firm will now incur a cost equal to that previously incurred *plus* the tax which is due the revenue collector. The price received by the firm from the consumer

will no longer be equal to the marginal cost of production, whic must now include the tax. The firm will find it advantageous to cu back on production and sales immediately; it can improve its prof position by so doing. The firm will lay off workers and reduce it rate of purchase of other variable inputs. As the separate firms reduc output, the total industry output will fall. This reduction in suppl will cause the market price paid by the consumer to rise. The extent o the price increase will depend on the responsiveness of demander to the price increase. In the short run, the price to the consumer wil not increase by the full amount of the tax. Some of the tax will b borne by the owners of resources which are relatively permanent ir the industry. Over the long run, however, resources not making ar average or normal return in the taxed industry will not be maintained and replaced; the effect will be a shifting of resources to nontaxed employments. This will gradually reduce the size of the industry; firms will shut down as plants are worn out. Finally, price will rise by the full amount of the tax and the industry will once more reach a position of long-run equilibrium. The price received by firms, net of tax, will be the same as before the tax. The price paid by consumers will be above the pretax price by the full amount of the tax. Fewer firms will be in the industry and total industry output will be reduced, the extent of the reduction again being dependent on the responsiveness of quantity demanded to price increases.

FIGURE 31-1

Popular Image of Excise Tax Fully Shifted to Consumer



This case is illustrated in Figure 31–1. The diagram is the familiar one of industry supply and demand. The price and quantity before the tax are shown as P_1 and Q_1; the price and quantity after tax as P_2 and Q_2. The tax is in the amount of P_1P_2 per unit. As this figure shows, the tax is fully shifted to the consumers because, under the conditions postulated, supply is highly responsive to price changes over the long run. Resources are asumed to be able to shift to nontaxed industries without difficulty, given sufficient time for adjustment. On the other hand, consumers of the commodity taxed are assumed to be unable to substitute nontaxed commodities in consumption except insofar is shown by the demand relationship.

This popular model is not so extreme as it might initially appear. When we consider that specific excise taxes are levied by single states within a national economy, the total share of the economy's resources affected is likely to be small. And if these resources are not highly specialized to the industry, the postulated adjustments on the supply side may take place with relatively little difficulty. If, for example, a state should place a tax on the product of an industry not located within the state and selling its output on the national market, the final results shown would take place immediately. The firms involved would simply refuse to market their products in a single state unless the price net of tax were as high as in other states. For example, a single state tax on billiard tables would almost certainly be paid exclusively by the individuals who play billiards and the owners of billiard parlors, both consumers of the product "billiard tables." The manufacturers of the tables would not sell their products in a single state at a lower net price than in other states.

This model of the specific excise tax becomes less applicable, however, when we consider either federal excise levies or those state taxes which are employed by many of the states. In these cases, the industries affected may be of significant size and may employ specialized resources. This requires that additional, and contrasting, models of tax shifting be examined.

Competitive Conditions—Constant Demand Price

We may now examine briefly the case which is the opposite extreme of the one just discussed. Although it is difficult to think of real-world examples, this case is useful as an analytical model. We can easily conceive of a specific tax being levied on the sale of a commodity that is produced with relatively specialized resources and the demand for which is highly responsive to changes in price. The case

is characterized by a very high degree of substitutability betwee the taxed product and nontaxed products on the part of consumers ar a lower degree of substitutability on the part of suppliers or resour owners. In this case, the full burden of the tax will rest, not wit consumers, but with the owners of resources permanently employe by the industry. The tax will reduce the economic rents of these r sources. Quantity consumed will be reduced only insofar as the su pliers are led by the reduction in return to reduce inputs of resource

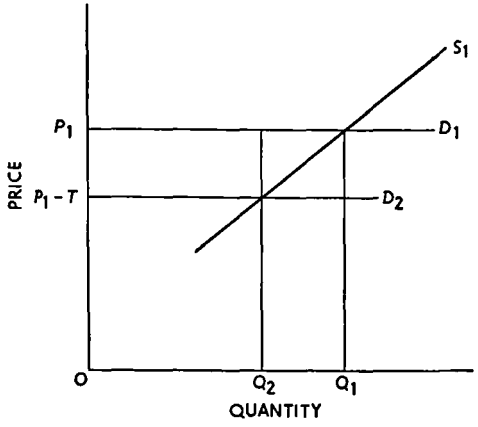
This case is illustrated in Figure 31–2. The notation is th same as that for Figure 31–1, but an important difference should b noted. In Figure 31–2, the price to the consumer stays fixed at P The "wedge" imposed by the tax in this case pushes the price to th supplying firm down to $P_1 - T$. In 31–1 the tax wedge was inserte by pushing the consumer price upward while the suppliers' net pric remains the same in the long run. In this opposite case, the price t the consumer stays fixed in the long run while the price received b the supplier is pushed downward. The first model is sometimes calle that of *complete forward shifting*; this second model is that of *com plete backward shifting* of the tax.

Competitive Conditions—Increasing Cost Industry, Decreasing Demand Price

The preceding two cases are useful in setting certain limits t the process of excise tax shifting and incidence. In the real worl most cases will fall somewhere between the two extremes, perha

FIGURE 31-2

Excise Tax Reduces Rents



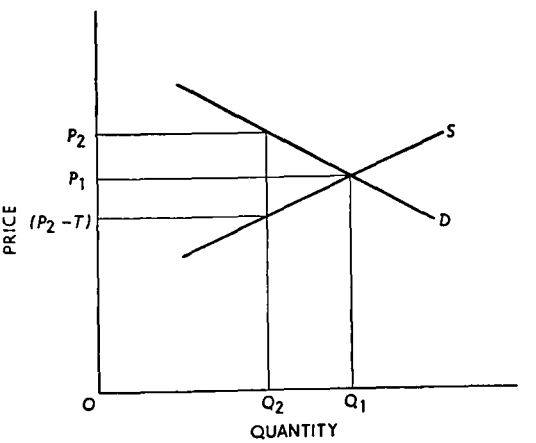
somewhat more closely approximating the conditions postulated in the first model than in the second. We shall continue to assume that competitive conditions prevail, but we shall now introduce a more realistic third model in which both quantity demanded and quantity supplied are responsive to price changes, but in which perfect substitutability is not present on either side of the market.

If we start, as before, with an industry in long-run competitive equilibrium, the tax will have effects similar to those traced out in the first model. But, as the industry contracts due to the increase in consumer price, the average cost of production declines. This suggests that certain resources are fixed to the industry, even after full adjustments have been made to the new situation. In the final equilibrium, the tax will be borne by both consumers of the product and by the owners of the specialized resources in reduced rents. The price will not rise by the full amount of the tax.

This third case is illustrated in Figure 31–3. Note that the tax wedge is now inserted by pushing the consumer price upward and the suppliers' price downward. The extent to which the tax will be shifted forward to consumers and backward to resource owners depends upon the relative slopes of the demand curve and the supply curve. If the supply curve is flatter than the demand curve, the greater share of the tax will be borne finally by the consumer. If, on the other hand, the demand curve is flatter than the supply curve, the greater share of the tax will be borne by the resource owner.

FIGURE 31-3

Excise Tax Increases Consumer Prices and Reduces Rents



Competitive Conditions—Prohibitive Tax

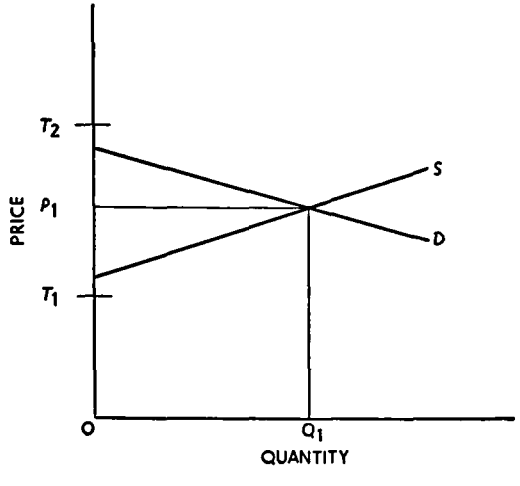
A fourth model of excise tax shifting may be briefly discussed. There may be many commodities which, if taxed, would disappear from the market altogether. The tax wedge cannot be inserted between demanders' price and suppliers' price at any level of production. If it is possible for resources to shift easily out of the industry and if consumers can easily shift to alternative products, the tax need not be large to be prohibitive. And a sufficiently high tax rate can always result in the industry's being eliminated.

This case is illustrated in Figure 31–4. The tax per unit is shown as the distance T_1T_2. There is no point where the vertical distance between the demand curve and the supply curve is so great as the tax per unit. Therefore, the tax will cause the industry to disappear in the long run. Consumers are not willing to pay the tax, resource owners are not willing to pay the tax, and there is no way in which the tax may be shared between the two groups.

This case is useful in illustrating the dilemma faced by very small local units of government in their attempts to impose excise taxes. Suppose a city tries to tax the sale of cigarettes. Immediately, consumers will start driving out to the borders of the city to purchase cigarettes by the carton. Supplying firms within the city will not be willing to absorb the tax. As a result, the sale of cigarettes in the city

FIGURE 31-4

Excise Tax—Causes Sales to Disappear



proper will almost disappear. Results such as these become even more dramatic if the small local government tries to tax commodities and services which command higher prices. For example, a small city would find it impossible to impose an excise tax of any significant amount on the sale of television sets. Both the long-run demand curve and the long-run supply curve for television sets *within a single city* will normally be relatively flat due to the existence of both buying and selling alternatives outside local boundaries.

Monopoly Conditions—Constant Costs

The cases examined to this point have all been based on the assumption that the product or service to be taxed is marketed under conditions of competition. While the competitive assumption seems the best single one that can be made for the consideration of many real-world problems, the analysis of the economic effects of excise taxation would be seriously incomplete if this assumption were not relaxed. It is necessary to examine how the conclusions reached under the assumption of the competitive model are modified when monopoly is explicitly assumed.

In monopoly analysis, we no longer can examine the behavior of an industry. The analysis must be at the level of the individual firm. By definition, a monopoly firm is one that can exert some control over the selling price of its product through varying its rate of sales. In more technical economic terms, a monopoly firm is faced with a down-sloping demand curve for its output. In competition, the single firm, having no control over selling price, is faced with a horizontal demand curve at the ruling competitive price.

In equilibrium, the monopolist will tend to equate marginal revenue with marginal cost in order to maximize profits. By the nature of the demand or average revenue function, marginal revenue at any given rate of sales must be less than average revenue or selling price. Therefore, when the monopolist equates maginal revenue with marginal cost, average revenue or price must be greater than marginal cost. This is recognized as the major trouble with monopoly. The price to the consumer is greater than the supply or cost price of resources entering into the product purchased. Price is greater than marginal cost, and marginal cost accurately reflects the value of opportunities foregone elsewhere in the economy. The consumer evaluation for the monopolist's product, price, exceeds the evaluation that the consumer places on alternative productive opportunities for the resource, marginal cost. The over-all efficiency of the economy can be improved by

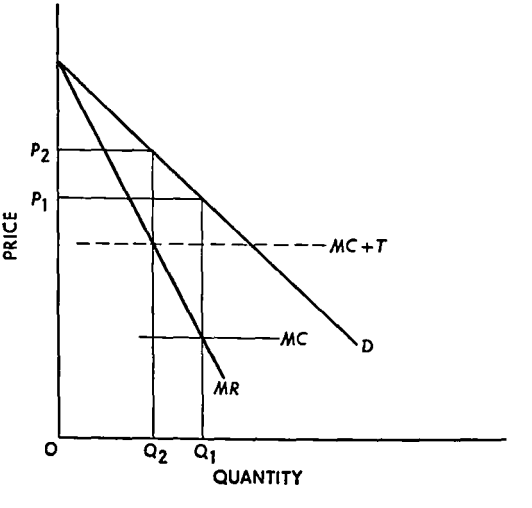
a shifting of resources to the monopolized industries and a relative expansion of this sector of production. By restricting output below competitive levels, the monopolist is successful in inserting a "monopoly wedge" between selling price and marginal cost.

As we did when we examined the competitive model, we shall assume that a monopoly firm is in equilibrium before the tax is imposed, and we shall initially assume that marginal costs of production are constant. We now assume that a fixed tax per unit of sales is levied, and that this tax must be paid by the monopolist. This tax will have the same effect as an increase in marginal and average cost. The monopolist will find it advantageous to reduce production and to increase selling price. But price will not rise by the full amount of the tax under normal conditions, even in this constant cost case. The reason for this is that some part of the tax will be paid out of the monopoly profits previously being earned in the industry. Monopoly profits are, in one sense, quite similar to rents, as our previous analysis has shown. The extent to which the price to the consumer will rise will depend on the slope of the demand curve, the responsiveness of consumer demand to price changes.

Figure 31–5 illustrates this case. The tax serves to shift the marginal cost curve upward. The firm finds it profitable to cut back production to Q_2 and to increase selling price to P_2. These are as-

FIGURE 31–5

Excise Tax—Increases Price, Reduces Monopoly Profits



sumed here to be long-run adjustments. Insofar as the monopoly firm has fixed inputs geared for the larger output, the price will tend to be increased less in the short run than over time.

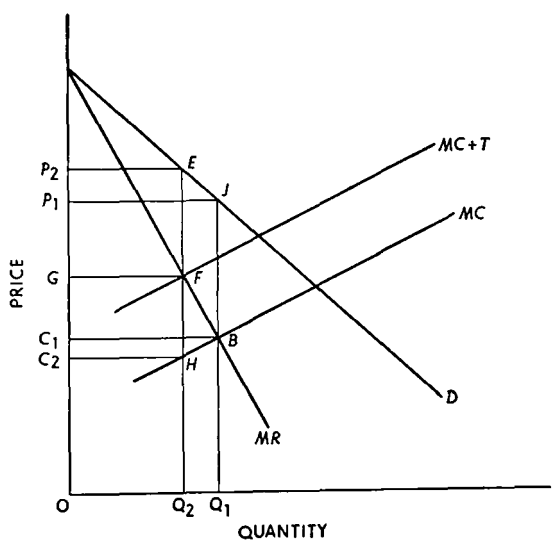
Monopoly Conditions—Increasing Costs

If the monopolist produces under conditions of increasing rather than constant long-run marginal costs, which would be the case if there are resources specialized to the industry, some share of the tax burden will be shifted backward to resource owners. In this case, consumers, resource owners, and the monopolist will all share the final incidence of the tax. Figure 31–6 illustrates this case. Consumers are required to pay a higher price, shown at P_2. Resource owners are required to accept a lower average rate of payment, shown by C_2 in comparison with C_1, and monopoly profits are reduced from an amount shown initially by the rectangle, C_1BJP_1, to the much smaller rectangle $GFEP_2$. The government collects an amount in taxes represented by the rectangle C_2HFG.

These two monopoly models are sufficient to show how the conclusions may be modified from those reached with competitive assumptions. From the models discussed, it should be possible to predict

FIGURE 31-6

Excise Tax—Increases Price, Reduces Monopoly Profits, Reduces Rents



with reasonable accuracy the effects of any single excise tax. For example, the tax on tobacco products, say, cigarettes, tends to be shifted forward to consumers, to reduce profits in the industry, which is characterized by certain elements of monopoly, and to reduce the rents of tobacco farmers. The taxes on whisky tend to be shifted forward to consumers in higher prices, and to reduce certain elements of profit in an industry not fully competitive. The West Virginia tax on soft drinks tends to be passed along to the consumer in higher prices, and to reduce somewhat the profits of local bottlers, who tend to have elements of locational monopoly in soft drink sales. In almost all cases, the consumer will bear at least some part of the burden of the tax. This tends to make the popular image of the tax, which assumes that the full burden is shifted to consumers, reasonably accurate. But the best evidence that producers bear the burden of the taxes also, either in reduced rents or in reduced monopoly gains, is indicated by the industry pressures exerted to prevent enactment of new taxes and to secure repeal of old taxes.

The Excess Burden of Partial Excise Taxes

Fiscal theorists have commonly claimed that the imposition of an excise tax on a single commodity or service places an excess burden on the consumer. The consumer is led, due to the price distortion caused by the tax, to shift his purchase or consumption pattern away from that which he previously has considered to be desirable or optimal. Therefore, the argument has proceeded, the tax exerts a burden over and above that which would be exerted if a similar tax were levied on income or wealth in such a way that the consumption pattern is not changed. The discussion of this excess burden has occupied a great deal of space in the learned journals during the last twenty years. This book is not the appropriate place to cover the argument in detail. It is perhaps sufficient to point out that recent advances have made the excess-burden argument much less valid than it seemed at one time.

The Limitations on the Partial Equilibrium Models

The analysis of partial excise taxes has been developed solely in partial equilibrium terms. That is to say, we have considered only one particular product and one particular industry. Conclusions reached in this way are likely to be of limited validity when extended to apply to the whole economy. For example, when we say that resources are shifted out of the production of the taxed product this implies that

these resources are shifted into the nontaxed industries, and the increase in supply will reduce the prices of nontaxed goods. Just as the consumers of the taxed goods are harmed as a result of the tax, the consumers of nontaxed goods find themselves in improved positions as a result of the tax. These and other like effects would all have to be fully traced before a complete analysis of a single tax could be said to be complete.

The usefulness of the partial equilibrium model in making real-world predictions depends in large part on the importance of the tax considered. If the tax is a relatively small one levied on a relatively unimportant product, these secondary effects will tend to be diffused throughout the economy and they may be neglected for all practical purposes. On the other hand, if we are considering a high-rate tax to be placed on an important product or on a range of products, the neglect of secondary effects can lead to serious error. As will be pointed out in the following chapter, a common error has been the extension of the analysis of a single excise tax to apply to the tax which is imposed on general sales, that is, on all commodities. An error that is almost equally dangerous is to extend the analysis of a single tax to apply to the whole host of single taxes taken as a group. In these cases, as with general sales taxes, the partial equilibrium models are of little value.

CONCLUSIONS

Only about half of total state-local revenues represent taxes collected for general purposes. Intergovernmental transfers, utility charges, including highway user taxes, and unemployment compensation taxes make up the other major components of the state-local revenue systems. Of the taxes producing general revenues for states and local governments, property taxes and general sales taxes are the most important. These remain to be discussed.

State and local taxes on individual and corporate income are important in some jurisdictions, but it seems questionable whether or not these are appropriate revenue sources for subordinate levels of government. Problems of conflict over source and of interstate competition in rates make the taxation of incomes more suitable for the federal government.

Specific excise taxes are important at all levels. The interesting feature of these taxes is their lack of generality, their obvious discrimination against certain groups of the people. This discrimination is explained only when it is recognized that these taxes are, almost

without exception, either sumptuary or regulatory. Sumptuary taxation provides a means of securing rough agreement on restricting the consumption of certain commodities and services without at the same time outlawing this consumption altogether. Regulatory taxes skirt the boundaries of constitutionality and for this reason have not been widely utilized.

The analysis of the effects of partial excise taxes offers an excellent opportunity to apply Marshallian partial equilibrium economics. The conclusions reached in each particular case stem from the particular assumptions made. But the popular image of the tax as being passed on to the consumer of the product taxed is roughly true, although a portion of the tax will normally be shifted backward to the factor owners and sometimes absorbed through reduced monopoly profits. Insofar as industries are roughly competitive, the tax is more likely to be passed on to the consumer of the product taxed.

SUPPLEMENTARY READING

The student who desires to get a generalized picture of state fiscal systems and of the comparisons among the several systems should consult the latest edition of *Tax Systems* (Commerce Clearing House). Unfortunately this valuable reference work has not been issued for several years, and there is no comparable source for securing current data. For a more condensed survey which contains many useful summary facts, and which is issued annually, the student should consult a recent edition of *Facts and Figures on Government Finance* (Tax Foundation, Inc.).

Chapter 32 GENERAL SALES TAXATION

In the preceding chapter were discussed excise taxes that are imposed on the production, sale, or consumption of specific commodities or services. A more important revenue source for the state governments must now be considered, that is, taxes levied uniformly, or approximately so, on a wide range of commodities and services. This type of tax is usually called a *general sales tax.* As suggested at the end of the last chapter, if particular excise taxes are imposed on a wide enough range of products, the results may approach those of general sales taxation.

As indicated in Table 31–1, the taxation of general sales and gross receipts produced a total of about $4.3 billion for state and local units of government in the fiscal year 1957. Of this total, more than $3 billion were collected by the state governments, for which the general sales tax, in all its forms, makes up the single most important revenue source.

Since the general sales tax is imposed generally on many commodities, it will be normally imposed as a percentage of the selling price. The category general sales taxation may be extended to include the use taxes employed to supplement sales taxes when purchases are made in other states, and gross receipts taxes employed in a few states.

The tax on sales may be imposed at the retail, wholesale, or manufacturer's level, and the tax may be levied on a multiple-stage basis or only at one stage in the production process. A multiple-stage tax, sometimes called a turnover tax, subjects the same good or service to a tax liability at each stage of the production-distribution chain. For example, a turnover tax of 1 per cent could be levied on each transfer of a good so that, by the time a good has passed through three stages of production and distribution before reaching the final

consumer, the effective rate of tax would amount to almost 3 per cent. This sort of multiple-stage tax is criticized on the grounds that it provides an uneconomic and artificial incentive for vertical integration in production and distribution. Whereas, in the absence of the turnover tax, the widespread use of separate wholesaling firms might be economically feasible, this stage might be eliminated under the tax. The multiple-stage or turnover tax has not been widely employed in the United States, but it remains important as a revenue producer in Germany, Austria, and other European countries.

The single-stage tax has been more widely used by the separate states and localities in this country; the characteristic form of the tax is the retail sales tax. The tax is placed on the act of selling goods and services at retail; this is the key transaction that creates a tax liability. The turnover of goods and services in the stages prior to the retail transaction is not subjected to tax. The tax is collected directly from retailing firms. The single-stage tax at the wholesale or the manufacturer's level is not employed widely.

The general retail sales tax is not currently employed by the federal government. The introduction of a federal sales tax at the manufacturer's level has been occasionally proposed, but the idea has never gained widespread support. Somewhat implicitly, this important revenue source has been accepted by both the politicians and the public as being appropriately reserved for the states. If the desirability of maintaining separate revenue sources for the separate jurisdictions in a federal political system is accepted, the limitation of this revenue source to the state and local units seems desirable. As was suggested in some of the analysis of the last chapter, the imposition of sales taxes by local units creates difficult problems of administration. Local units do use this revenue source to some extent, but problems of avoidance and evasion become quite serious when the tax is attempted at this level of government. In the over-all fiscal system of the United States as it now exists, the general sales tax, levied at retail, seems more appropriate as a *state,* rather than a federal or a local tax.

Thirty-five states currently (1960) employ general sales taxation (including gross receipts taxes) as a revenue source. Collections from this source made up almost half of total general revenues collected from taxes by state governments in the fiscal year 1957, or almost one fourth of all state tax collections, including highway user and unemployment compensation taxes.

As suggested previously, the retail sales tax is usually imposed on a wide range of commodities, and the rate is usually a uniform percentage of the selling price. Rates in the several states range from 2 to 3 per cent. Each of the state taxes is supposedly "general" in the sense that no particular group of commodities or services is deliberately chosen for taxation. But in most states, various commodities and services are specifically exempted from inclusion in the general coverage. The extent of these exemptions varies widely among the separate states. Many states exempt food purchases, obviously a very important exemption which removes any real conception of "generality" from the tax. Other states exempt food purchases in part. For the most part, services, as opposed to commodities, are exempted from tax. Medicines, drugs, funerals, and a whole host of miscellaneous items are variously exempted. The exemptions seriously reduce the base of the tax in many states and hence its revenue-producing capacity. Despite these exemptions, however, the tax remains a very important element in state revenue structures.

ECONOMIC EFFECTS OF GENERAL SALES TAXES

The most important distinction to be made between the analysis of a specific excise tax and that of a general sales tax lies in the method or approach. In the specific excise tax analysis, a partial equilibrium approach could lead to quite useful results. But by the very nature of "general," this partial approach is wholly unsatisfactory when we come to analyze the effects of general sales taxation. The failure to make this important distinction has led to the most serious of errors in both popular and academic discussion of the effects of general sales taxation.

In order to emphasize the nature of the distinction that must be made, we may review briefly the analysis of the specific excise tax in the most simple case. We assume fully competitive conditions, and assume that the single product taxed is small and uses no specialized resources in its production. It was shown that the tax increases marginal costs; this in turn leads to a reduction in output in the taxed industry both in the short run and in the long run. Resources shift out of the production of the taxed commodity, and the price of the commodity to consumers increases. This increase in relative price occurs regardless of the state of monetary or cyclical disturbances in the economy. The rate of increase in price will depend on the speed with which resources can shift out of the industry producing the prod-

uct subjected to tax into other employments. The increase in the relative price of the taxed commodity clearly harms the consumer, and, insofar as the assumptions of this simple model hold true, the consumer bears the tax.

This brief review of the analysis of a partial or specific tax on the sale of a single commodity is necessary in order to contrast it quite sharply with that of a general sales tax levied on the sale of many commodities. In the first place, it must be noted that, insofar as the tax is *not truly general,* some effects similar to those described for the partial tax must take place. Since no "general" tax can be really "general" in a purely economic sense (such a tax would also be placed on the use of leisure, among other things), some shifting of resources from the taxed employment to the untaxed employments can be predicted to occur as a result of the tax. There will also be some shifting in relative prices between the taxed and the nontaxed sectors of the economy. But, and here is the important qualification, if the tax is broadly based, much of the correct predictive analysis must be based on a "general" rather than a specific or partial model.

Although we recognize that each general sales tax has certain specific exemptions and also omits large categories of consumption from taxation by neglect, we may best analyze these taxes *as if* they were, in fact, general. That is, the appropriate analysis is to assume that the taxes literally apply to all commodities and services sold at retail, including things which the individual "sells to himself," such as leisure. This general tax model is sharply different from the partial tax model for a quite simple reason. If the tax is uniformly imposed on the sale of all commodities and services, there can be no real shifting of resources from taxed employments to nontaxed employments. The shift in relative prices occasioned by the partial tax cannot occur under a truly general sales tax.

Will the general sales tax increase all prices, and does the final incidence rest with the consumer? This is a much-debated question and competent scholars disagree on the answer, primarily because they define terms differently and employ different analytical models in reaching their conclusions. Here, as elsewhere, it is essential that the assumptions of the analysis be clearly and explicitly stated.

When the analysis of partial excise taxes was discussed, it was unnecessary to make explicit any assumptions about monetary conditions in the economy. This was because the analysis was concerned with the shift in relative prices occasioned by the imposition of the tax; and these shifts would occur regardless of the level of absolute

money prices. With the general sales tax, shifts in relative prices cannot occur directly as a result of the tax if the tax is truly general. Therefore, the shift in prices, if this occurs at all, must be in the whole price level, that is, in the money prices of all goods and services. This analysis requires, therefore, that we make quite clear the monetary conditions assumed to prevail when the general sales tax is imposed.

The first assumption that might be made is that the monetary authorities, the Federal Reserve Board, always act in such a manner as to keep the absolute level of product prices constant. In such a setting, the introduction of a general sales tax cannot increase the level of prices, by definition. Therefore, the tax must finally result in a net reduction in the prices of productive services or factors. The tax "wedge" must always be inserted between the final selling price of the products and the net price received by firms. If monetary action prevents any increase in the final product prices, the wedge caused by the tax must drive factor prices downward or else create unemployment. In this model, therefore, the general sales tax is shifted backward to the owners of the factors of production. Individuals as factor owners, rather than individuals as consumers, bear the full incidence of the tax.

It will be useful to trace out the process of reaching these conclusions more carefully. As with the partial excise tax, the imposition of the general sales tax will increase marginal cost to the selling firm. The firm will, if it is acting as a profit maximizer, try to reduce output. This involves a reduction in the rate of inputs purchased. Workers will be laid off, raw materials and capital equipment will not be purchased or hired at rates prevailing before the tax. But the results will be wholly different in this case from those shown to take place in the partial tax model. Workers who are laid off in one industry cannot now find employment in a nontaxed industry. For, by definition of a general tax, there are no nontaxed employments. The same holds true for capital equipment. Alternative employment opportunities for resources do not exist. Unemployment will be the necessary result unless factor owners agree to accept lower prices for their resources services. Hence, insofar as factor markets are roughly competitive, productive service prices, and with these, factor incomes, will fall. In the long run, the supplies of the various productive factors may not be absolutely fixed, but these adjustments can best be ignored at this elementary stage of analysis.

The point to be noted here is that the effects of the general sales tax in this model are approximately equivalent to those of a proportional tax on factor incomes. Consumers, as such, do not bear the burden of the general sales tax.

These conclusions seem to hold regardless of the assumptions made about factor markets or about monetary conditions. If the markets for productive factors are not competitive, factor prices may be rigid against downward pressures, and unemployment rather than price-wage reductions may occur. In this case a disproportionate share of the tax is placed on those who become unemployed. But these are factor owners, not consumers. Even in this case, consumers do not bear the tax.

Many variations could, of course, be made in the monetary assumptions. We need not continue to assume that the monetary authorities act always so as to stabilize some price index. One approach is that of assuming that the monetary authorities are relatively passive, and that they will allow the money supply to expand sufficiently to finance the tax-induced price increases. In this case, final product prices will, of course, rise. But it seems that this sort of general rise in prices should be attributed directly to the increase in the supply of money, rather than to the tax. The fact that the imposition of the tax triggers the reactions that make the increase in the money supply necessary does not seem to alter the direct causal relationship between the money supply and the price level in such circumstances. If the price increase is attributed to the increase in the supply of money by the monetary authorities, the effects of the tax are the same as in the simpler model. Factor owners are still made worse off than they would be without the tax. Differentially, the general sales tax, precisely because it is general, must be quite similar in effect to the proportional income tax.

From this analysis of a truly general sales tax, it is relatively easy to move to an analysis of the tax as it is actually organized in modern fiscal systems. Insofar as exemptions and omissions narrow the base of the tax, there will be some shifting of resources from taxed into untaxed employments and some shifting of the tax burden forward to consumers. The proportion of forward and backward shifting will depend in every case on the degree of generality of the tax. If, for example, a single state were to levy a general sales tax, with all other states in the national economy financing public services differently, the tax would tend to be shifted forward almost fully in the long run. Although all products and services sold within the state

might be subjected to the tax, these make up only a relatively small proportion of national output. On the other hand, if all of the states levy general sales taxes, and none of them allow substantial exemptions, most of the burden would fall on owners of productive factors. In the current institutional setting, a sufficient number of states levy taxes that seem to be sufficiently general to insure that at least an important proportion of the real incidence is on factor owners. The popular image that this tax is fully borne by the consumer seems fundamentally erroneous, although consumers must bear some share of the burden.

SECONDARY EFFECTS OF GENERAL SALES TAXATION

Just as with all fiscal action, the imposition of general sales taxation exerts secondary effects when the complete fiscal structure is examined. If the proceeds of the tax are employed to finance government purchases of goods and services, the over-all pattern of resource use is modified. Some factor prices rise, others fall; some final product prices rise, others fall. Secondary effects stem from the combined taxing-spending operation, and there are almost certain to be net beneficiaries and net "taxpayers" in the process in each case.

The many models of secondary effects need not be elaborated in this textbook. But it is important to recognize that any complete analysis, especially of a reasonably general tax, must consider not only the primary or first-order effects, but must also examine the secondary effects. There are three alternative assumptions under which these secondary effects may be traced out. The first, illustrated previously, assumes that the proceeds are to be used to finance supplemental public services. A second approach assumes that the proceeds of the tax to be analyzed are used to allow a corresponding reduction in another tax. A third possible approach assumes that the proceeds are not to be used. This third approach involves the building up of governmental cash balances as a result of the tax collection. This, in turn, will cause deflation. This approach seems less satisfactory than the other two in that it mixes up what is essentially fiscal analysis with monetary analysis. It seems desirable to keep these analyses separate insofar as is possible.

ADVANTAGES OF GENERAL SALES TAXATION

The major advantage of general sales taxation lies in its potential revenue yield at what seem to be relatively low rates. Additional arguments in support of this tax appear when the desirability of sepa-

rating revenue sources among levels of government is recognized. As the foregoing analysis has shown, the effects of the general sales tax are roughly equivalent to that of the proportional income tax. Even so, in a federal political system where income taxation is to a large extent reserved for the central government, the levy of general sales taxation by subordinate units is more acceptable. An advantage of a different sort lies in the relatively low cost of collection; rarely do the costs of administering this tax run more than 2 per cent of total revenues collected.

A questionable advantage of this tax which is sometimes claimed is its ability to extend the real costs of government to individuals and groups of the population that would otherwise escape taxation altogether. Administrative costs of imposing income taxes on low-income families may be very great. Hence, even if not desired, income taxation usually exempts large numbers of low-income families through personal exemptions and deductions. Yet these families also participate in the decision-making processes of democratic governments, and it is argued that they should have some direct sense of the real costs of governmental activity. This argument would have much to recommend it were it not for the fact that sales taxation does not really cause individuals to become conscious of the costs of government as represented in the real tax burden. The tax imposes a "wedge" between factor prices and final product prices, but the individual factor owner or the individual consumer does not sense that his income is actually lower than it would otherwise be without the tax. In some respects, individuals are "conscious" of the tax in their roles as consumers in that the popularly accepted fallacy that consumers bear the full burden of all sales taxes is widespread. But even here, the consciousness is somewhat indirect and is of a wholly different nature from that involved in the payment of an income tax. It seems clear that indirect taxation, regardless of the form in which it is imposed, tends to foster a genuine "fiscal illusion" on the part of the taxpayers.

DISADVANTAGES OF GENERAL SALES TAXATION

The major disadvantage of sales taxation, specific or general, lies in the tax-consciousness aspects discussed previously. Individuals are not conscious of the real costs which the payment of the tax imposes on them individually. They cannot, therefore, correctly compare the net advantages yielded by the government services which are financed by the tax with the alternative private goods which could be consumed in the absence of the tax. To many students of public fi-

nance, this individual comparison is of little relevance since the decisions on both taxes and government spending are assumed to be made by the government as something apart from the individual citizens. However, as has been repeatedly emphasized, this book assumes that the problem is one of discussing fiscal institutions and public finance in a free democratic society. From this assumption it follows that, in the final analysis, individuals must, through their elected representatives and constitutionally sanctioned methods of legislation, make the choices concerning the relative magnitude of the various taxes and the public expenditures. In order to do this wisely, individuals and families must be placed in a position where they can make reasonably straightforward comparisons. Indirect taxation makes these decisions and comparisons especially difficult and, therefore, on these grounds alone, direct taxation is always to be preferred.

Having now discussed what seems to be the primary disadvantage of sales taxation (or of indirect taxation generally), there remain to be considered some of the alleged disadvantages. One of the most popular and traditional of these objections to sales taxation is the claim that it is "regressive." As suggested earlier, this emotive word, like its opposite, "progressive," tends to cause much confusion in popular discussion. Several points need to be made. First of all, the general sales tax is proportional in rate, not regressive. The rate is a fixed percentage of the base, which is selling price. But this is not what the term "regressive" is held to mean in this case. Presumably, the argument suggests that the final burden in relation to income as a base is not proportional. The tax tends to be proportionately more onerous to lower-income than to higher-income families. This argument stems, of course, from the acceptance of the commonly held view, discussed previously, that all sales taxes, specific or general, are finally paid by consumers rather than by factor owners. Insofar as the tax is generally imposed, it will tend to fall on factor owners, and it will be proportional rather than regressive, even when estimated in terms of an income base.

Even if the popular analysis is accepted, however, and it is concluded that general sales taxes are borne by consumers, there is no basis for the claim that such taxes are bad or undesirable because they are "regressive" with respect to an income base. The proportionate share of income devoted to consumption spending does, of course, decrease as income rises. On this basis, therefore, the tax burden would be "regressive." But again we must recall that the tax, any tax, is only half of a fiscal operation—absolutely no value connotation can

be placed on one half standing alone. A "regressive" tax may finance an even more "regressive" expenditure, or allow the reduction of an even more "regressive" tax. It is best to eliminate all reference to the advantages or disadvantages of individual taxes on the grounds of either regressiveness or progressiveness. Regression or progression can be discussed sensibly only in terms of an over-all fiscal system, and redistribution as a fiscal goal is important largely at the central government level.

CONCLUSIONS

General sales taxation constitutes an important part of the over-all fiscal structure of the United States. As the rapidly increasing financial needs of the states and the local governments multiply over the next quarter century, we can expect additional states to turn to this highly productive revenue source. The argument for keeping revenue sources separate among the levels of government suggests that the federal government should enter this field of taxation only as a last resort. However, as the national economy adjusts somewhat more permanently to the extremely high federal government expenditures which have characterized post–World War II years, some reduction in personal and corporation income taxes may be necessary to prevent serious erosion of these important tax bases. The general sales tax provides an available, and attractive, alternative to legislators who might be willing to impose indirectly tax burdens which the people would never accept if imposed directly. One thing appears reasonably certain: A federal sales tax, once imposed, would not be removed. This provides all the more reason for limiting these taxes to the states. Additional local governments will, without doubt, try to impose both general and specific sales taxes to meet rising revenue needs. These taxes can be only partially successful, and they will do their bit to add to the existing set of causes which are creating the modern sprawling of suburbia.

SUPPLEMENTARY READING

An exhaustive and comprehensive treatment of general sales taxation may be found in John F. Due, *Sales Taxation* (Urbana: University of Illinois Press, 1957).

Chapter 33 THE TAXATION OF CAPITAL: COMPARATIVE ANALYSIS

Revenues collected from the taxation of property are exceeded only by those collected from individual income taxes and corporation income taxes in the over-all fiscal system of the United States. Before discussing the characteristics of this important fiscal institution and analyzing its effects, we shall consider some of the conceptual issues raised by the taxation of capital values generally. Specifically, we shall compare capital taxation with income taxation. Following this we shall examine the ideological origin of modern property tax institutions. A factual discussion and analysis of property taxation in the United States will be contained in Chapter 34.

THE TAXATION OF CAPITAL AND INCOME: A COMPARISON

Income, considered as a flow of real services over some specified time period, is the primary economic magnitude. Individuals consume, or use up, income. And all goods, physical goods, are valued, that is to say, command other goods and services in exchange, only because they have some capacity to yield income over time. Capital values are, therefore, derivative from income flows. The actual process of valuing any asset involves converting an anticipated income flow (a flow which must be stated in terms of some time dimension) into a capital sum, a sum which is without a time dimension although it must be placed uniquely in time; a capital value must be dated. Any income stream can be converted into a capital value, and any capital value can be converted into an income stream. The conversion process requires only the introduction of some appropriate rate of discount. Income expected in the next year is less valuable to the individual than income at present. Hence, next year's income must be

"discounted" by some appropriate rate in order to arrive at some accurate present value. Normally, the forces of the market for assets tend to make the appropriate rate of discount for most assets equal to the "rate of interest," adjusted as necessary for differential risks and differential liquidity features. The mechanics of capitalizing an income stream need not be considered in detail here. The important point to be noted is that, given a rate of discount, any real asset or claim can be expressed either as a capital sum, a present value, or an income flow over time. A bond yielding $100 annually, a consol having no maturity, with a discount rate of 5 per cent, can be expressed as being worth $2,000. This dual manner of definition holds for any asset or claim and, conversely, for any income stream.

This basic equivalence of an income stream and a capital value allows the first significant point in the comparison between income taxation and capital taxation to be made. There is no fundamental conceptual difference between these two methods of taxation if income and capital are defined similarly in the two cases. To levy a tax on the capital value of the bond at 1 per cent, or $20 per year, is precisely equivalent to levying a tax on the income yield of the bond at 20 per cent, or $20 per year. The ratio of the 1 per cent to the 20 per cent is equal to the rate of discount employed to convert the income flow into the capital sum. The individual owning the bond would be completely indifferent between these two taxes, and the economic effects of the two taxes would be identical.

The equivalence does not end here; the time sequence of the tax collection in each case need not be the same. For example, in our simple model, a once-and-for-all capital levy of 50 per cent on the value of the bond is identical with the levy of a 50 per cent tax on the income produced by the bond over all future years. The fully rational bondowner would not be affected in his behavior by the substitution of one of these taxes for the other. Any capital tax can be converted into an income tax equivalent, and any income tax can be converted into a capital tax equivalent.

The conceptual equivalence between a tax on capital and a tax on income provides a useful starting point for a comparative analysis because further steps in the analysis suggest important differences rather than similarities. As the income tax and the capital tax tend to be administered, the differences tend to overshadow the fundamental equivalence.

Recall the discussion of income taxation in Chapter 21. Two separate conceptions or definitions of income were noted, the *flow*

conception and the *accretion* conception. In the former, income is viewed as a "flow" of real services over time, a physical flow which can, ideally, be measured quite independently of any person. Note here that it is this flow conception of income that has been used in our discussion of valuing capital assets. By contrast, the accretion conception defines income in terms of potential consumption opportunities open to the individual over time; income is measured by the goods and services actually consumed plus the accretion to individual net worth over time. As suggested, existing income tax institutions do not represent either of these conceptions faithfully. But, insofar as either conception must be given a place of dominance, the accretion conception seems to be somewhat more influential. Capital gains are taxed to some extent, and interest is allowed as a deduction. The taxation of capital, on the other hand, embodies the valuation of specific assets independently of the set of individual claims to these assets. That is to say, the taxation of capital is based almost exclusively on an acceptance of the flow conception of income. The two taxes, those on income and those on capital, are not, therefore, equivalent in practice. They become quite different in characteristics and effect since they are based on opposing definitions of income itself.

These differences may perhaps best be demonstrated by examining briefly the way in which consistency could be introduced into a tax system using both income taxation and capital taxation. If the accretion conception of income were to be accepted for purposes of both taxes, the capital tax and the income tax would alike be *personal* taxes. Individuals would be subjected to tax, not on the basis of specific assets owned, but on their *net wealth*. Income taxes would be imposed on accretions to net wealth plus consumption, while capital taxes would be imposed on the aggregate net worth. Debts against property held in legal ownership would reduce the tax liability of the owner, and corporations would not be subjected to capital taxation at all. The value of all corporate property would be taxed through the intangible claims to property held by individual equity shareholders.

On the other hand, if the opposing flow conception of income were to be consistently followed in the organization of both taxes, neither tax would genuinely be a personal tax. Income would be subjected to taxation, not as received by any particular individual, but as it physically moves through the circular flow of the economy, as it is "produced," "distributed," "received," or "consumed." Assets producing this real flow of income would be taxed, as real assets, not

as owned by particular private persons. Corporations holding legal title to real property would be directly liable to pay the tax on real property, and individual holdings of intangible claims would be exempted from taxation. Any taxation of income at more than one point in the circular flow would be properly considered to be "double" taxation.

These two models of consistent income and capital taxation are helpful in indicating the hodgepodge that is actually represented in the United States fiscal structure. By and large, income taxation tends to be similar to that of the first model. The tax is a personal tax; capital gains are taxed, although at differentially favorable rates; and interest payments are allowed as deductions from taxable income. By contrast, capital (property) taxation in the United States more closely follows the second model. Property taxation is not personal taxation; the tax is imposed directly on the value of the assets. Failure to pay the tax creates a claim of the state against the asset, not against the owner. No deduction against taxable value is allowed for debts against the property.

Neither income taxation nor capital taxation is fully consistent in itself. As has been shown, capital gains are taxed at differentially favored rates, not full rates. The dividends credit in the personal income tax embodies some recognition that "double" taxation does occur, an institutional recognition of the validity of the flow conception of income. The property tax, similarly, does include the taxation of intangibles in some states, and many states attempt to classify property in terms of different individual uses. These measures represent attempts to make the tax more "personal," a denial of the complete acceptance of the flow conception of income.

Since the two taxes, those on income and those on capital, do have, to a large degree, different conceptual bases, several important differences may be expected. Only personal taxes can effectively discriminate among persons in terms of differences in the size of the tax base. That is to say, only with personal taxes can redistributive objectives be included in the organization of the rate structure. Because the income tax is a personal tax, it can be, as is, a progressive tax. A nonpersonal tax cannot be progressive or regressive with anything approaching this same degree of distributive efficiency. The tax base is divorced from personal relationship; the tax must be proportional in the sense that the rate must bear a constant ratio to the base. Attempted discrimination in rates among persons would tend to be almost wholly arbitrary. Property or capital taxation tends, there-

fore, to be proportional in its nominal rate structure. The same rate applies to all units of property within a single classification. As will be seen when property tax administration is discussed in the next chapter, the classification of property and differential assessment can make the actual tax disproportional.

A second important difference between the tax on income and the tax on capital tends to make these two taxes complementary when the over-all fiscal system is examined. Each tax tends to have built-in discrimination against or in favor of certain forms of income or capital, but these tend to be offsetting when both taxes are combined. When income taxation was discussed, we noted that the tax tends, in practice, to discriminate against income from labor and in favor of income from capital assets. The reason for this discrimination is that full allowance for the depreciation of capital assets is allowed as a deduction before net income is measured for tax liability. By contrast, the individual human being is not depreciated in tax accounting, although it is widely recognized that a certain share of labor income must, in all cases, be properly attributable to the "wearing-out" of the human asset. As shown, some countries do make a distinction in rates as between labor and nonlabor incomes, but this distinction is not made in the United States. Income taxation, therefore, tends to discriminate against labor incomes.

By comparison, property taxation or capital taxation tends to discriminate in favor of labor income and against income from assets. Legal institutions in Western countries do not allow the individual human being to convert his own expected earnings power into a capital sum and to market this power as a capital asset. Hence, the capitalization of income does not normally take into account the human asset, and the valuation of wealth does not include, normally, the capital values of human beings. This is perhaps the most important single category of capital assets existing at any moment of time, but these assets are never valued for tax purposes. Therefore, capital or property taxation tends to discriminate in favor of those individuals holding their real wealth in terms of their own personal earning power and against those individuals holding their real wealth in nonhuman forms. An example may prove helpful. Suppose that an individual, at age twenty, inherits a sum of $10,000. He may do either one of two things with this sum. He may spend it in getting a college education; or he may invest it by purchasing an income-yielding real asset. If he chooses the first alternative, he will be investing in his own person, and, presumably, his

capital value, his expected earning power, will increase. As he earns income over time, however, he will not be allowed to depreciate this capital value for tax purposes. He will, therefore, tend to pay a higher income tax, over time, than he would with the second alternative. If, however, he chooses the second rather than the first opportunity, if he should purchase the income-earning asset rather than the college education, he would be subjected each year to property taxation which he would altogether escape under the first alternative. The two taxes, existing in the same over-all system, tend to be corrective of each other. Given the importance of the tax on real property in the American fiscal system, along with the inexcusably high taxation of corporation incomes, it does not seem desirable to introduce any differential treatment of labor income under the income tax. Quite similarly, the extension of the property tax to include the estimated capital values of human beings seems unnecessary.

This comparison illustrates an important principle in public finance. Students have, in the past, been somewhat careless in condemning or praising particular features of the tax or the expenditure system in isolation from the over-all or combined fiscal structure. It is difficult to appraise or to evaluate fiscal institutions in partial terms; criteria which show particular institutions to be desirable or undesirable are likely to be relevant only for the system considered as a whole. Particular institutions cannot be considered independently of the larger system of which they form only a part.

IDEOLOGICAL ORIGINS OF PROPERTY TAXATION

The taxation of income is a relative newcomer in the group of tax institutions, and modern income taxes have their origin largely in late nineteenth and early twentieth century ideas of distributive justice in allocating the burden of taxes among individuals. The taxation of capital or property has a much longer history, and the doctrinal history itself is both interesting and informative. Rarely do we have the opportunity to trace the impact of economic ideas so directly to political support for and the subsequent development of existing institutions.

The taxation of property, or capital, suggests that the base of the tax must be real things, that is, real assets which assume physical location in space. "Land" has always been one important form of real assets, and, in centuries past, "land," as such, was far more important, relatively, than it is today. The origins of the taxation of land stem from medieval conceptions of land as being held in "common"

ownership. The rights to private property in land have been suspect in almost every age, and land has been given mysterious qualities which set it apart from other real assets. Any complete history of the property tax would have to examine these important background ideas more carefully, for they were certainly influential in later thought. Here we shall be concerned only with ideas which were developed in modern times and which have been directly influential in the development of modern property tax institutions.

The Physiocrats

In the middle of the eighteenth century a group of French court physicians, who have come to be known as the physiocrats, developed the idea of the circular flow of income in the economy. As they tried to trace the movement of income from one sector of the economy to the other, they reached what appeared to them a startling conclusion. Agriculture was the only "productive" sector of the whole economy; all of the other activities were essentially "unproductive" or sterile and consisted in the mere transformation of goods into different forms and in the provision of services. Only in production on the land, in agriculture, was there produced a genuine "net product," a true surplus over and above the real costs of production. This net product or surplus was received by the owners of agricultural land as rents. On the basis of this model of the economy, the physiocrats proposed that this net product, this surplus produced on agricultural land and received as rent by the landlords, be made the source of taxation. This was the only place in the economy which could, in fact, support taxation.

The physiocrats were, of course, grossly in error insofar as their analysis was concerned. They were concentrating on the physical aspects of goods. They completely failed to see that the transformation of wheat into flour, of flour in Bordeaux to flour in Paris, of flour into bread, or of bread in the kitchen into bread on the dining table are all equally as productive of utility to the consumer as is the initial transformation of seed, labor, and land into wheat. They had none of the more modern notions about utility, and their economic analysis was very primitive. Nevertheless, the ideas are important in representing the origins of the idea that land is the suitable place for all taxation since it is the only place where a net social surplus occurs. These ideas may still be found today in the common observation that the agricultural industry is, in some mysterious way, more basic or essential than other industries in the economy.

The Ricardian Theory of Rent

The work of the classical economists, notably Adam Smith and David Ricardo, was completed after the physiocrats, and it was influenced to a significant extent by their ideas. It was Ricardo who formalized the classical theory of rent, the implications of which are quite similar to those deriving from the physiocratic theory of land use.

Ricardo was trying to explain the causes of value, and he sought to show that relative values of goods depended on the amount of labor involved in production. One of the difficulties in his way was the absence of any satisfactory explanation of the phenomenon of land rent. The return to capital could, conceptually, be explained away by calling this the reward to past labor, but there was no way that this idea could be applied to land. Ricardo surmounted this difficulty by explaining that all values of goods are really determined on marginal lands which earn no rents. As the population increases, it becomes necessary for food production to be extended to poorer and poorer grades of land. But since the amount of labor involved in production on the poor lands must exceed that on the rich lands, the price or value of the "wheat" must increase as the population increases and as cultivation is extended. Since the landlords owning the rich lands will not be required to pay more than the going wage for labor, there will accrue to them a "rent," which represents the return over and above the costs of production on the marginal lands, the latter being determined by the extent of the arable land and the rate of increase in the population. The rents on the superior lands would continue to rise as the population continued to increase.

Ricardo's analysis is considerably more sophisticated than that of the physiocrats. But it reaches fundamentally equivalent conclusions. The rent of pure land, which Ricardo called "the original and indestructible powers of the soil," was, in a sense, a genuine surplus received by the landlords. There was no pain or disutility involved in securing this return, as was the case with labor or with the abstinance involved in saving and investing. Rent of land was not a real cost of production; it was the result of price and not a cause of it.

This Ricardian rent theory suffers from his failure to understand the ideas of marginal productivity or opportunity costs, ideas, and concepts that remained to be developed after his time. Marginal productivity theory can show, quite easily, that the rents received by the landlords in each case represent nothing more and nothing less than

the marginal productivity of the land, the contribution of the land to the total production. In this respect, the theory shows that land is not different from any other productive resource; the traditional distinction was not based on any economic difference. Ricardo's failure to see this was, in turn, due to his idea that real cost must involve pain or sacrifice. Had he been able to see that the existence of pain or sacrifice has no direct connection with cost, but that cost can only be defined in terms of foregone opportunities, he would have reached different conclusions. The full rental returns of landlords would have been seen to represent a surplus only if land has only one possible use. Once land is recognized to have many uses, the rent of land becomes a cost similar to the payment for any productive service.

The Single Tax and Henry George

The modern neoclassical theory of rent was not developed until approximately the turn of the century. Prior to this time, the Ricardian ideas were very important in influencing discussion and in generating popular support for a policy of land taxation. This movement received its impetus in America through the efforts of Henry George and through the results of his book *Progress and Poverty*. George became the leader of a movement which supported the concentration and consolidation of all taxes into a *single tax* on land values. The proponents of the single tax accepted the Ricardian theory of differential rent without critical reflection. The gross returns to "pure land," apart from improvement to land, were considered to represent income shares that were surplus in the sense that no real efforts or sacrifice were involved in generating them. Onto this basic conception of rent was added the provocative idea, usually associated with Hobson, that the taxation of this social surplus could be accomplished without the economy being disturbed at all. The single tax was, thus, the most efficient of all taxes. The undesirable effects of ordinary taxation could be completely eliminated if only pure "land" were subjected to tax. The single tax became the perfect tax to its proponents. A third factor lent considerable support to the movement. Common observation of the rapidly growing urban areas in the United States revealed that the owners of land placed adjacent to the rapidly growing cities were in extremely favorable positions to reap large capital gains. Capital values of land in such areas were rising rapidly, as a result of no apparent effort on the part of the landowners. These three elements: Ricardian rent theory, Hobson's idea of the efficiency of taxing social surpluses, and the empirical observation of increasing

urban land values, gave substantial support to a policy of the taxation of real property, with a special emphasis on land. The single tax, as such, was never effectively supported. But the present importance of property taxation in the local government fiscal systems must be attributed, at least in part, to the strength of this movement. The separation of land values from the values of improvements to land is still supported by many modern writers, and differential classifications applying to these separate types of property are to be found in several fiscal systems.

The Modern Theory of Economic Rent

The modern approach to the theory of rent allows us to see both the strong and the weak points in the Ricardian rent theory and in its practical consequence, the single tax movement. Rent is commonly defined as the return to any resource, whether this be land or any other form of capital. If the resource is permanently fixed in one employment, that is, if no alternative employment opportunity is available, all of the return may be defined as *economic rent*, as distinguished from *rent*, used without the adjective. This *economic rent* may be more precisely defined as the return to a given resource over and above what that resource could earn in its next most favorable employment. In one sense, therefore, the whole of *economic rent* is an unnecessary payment. It is unnecessary in the purely instrumental sense of not being required to get the resource into production. For example, suppose that a professional baseball player can earn $100,000 playing baseball, but no more than $10,000 in any alternative employment. Suppose further that he is motivated purely by pecuniary considerations. Nine tenths of his annual income, or $90,000, is *economic rent;* this part of his income serves no economic purpose, so to speak, since for any salary above $10,000 this individual would, presumably, play baseball. This example suggests the intuitive appeal of the tax on this "surplus."

The difficulty of imposing taxes on economic rents lies in the impossibility of distinguishing between those returns to resources which constitute true rents and those which constitute genuine opportunity costs of production. If some omniscient observer could superimpose some "fiscal vacuum cleaner" over society and take out only the pure economic rents, then taxation could proceed, perhaps, without undue economic effects. But the results would not be at all acceptable from the point of view of equity or justice. Some of the poorest of the social group secure most of their incomes from eco-

nomic rent, and there is no reason whatever for thinking that the owners of "pure land" would be especially hit by such a tax. There is no reason why the payments for land should include greater elements of economic rent than the returns to other resources. It is now generally accepted that "land," in any meaningful economic terms, can be "produced." The only grounds for particular distinction of land from other assets lies in the greater permanency of investment in land. This makes it seem probable that the returns to land include a greater element of what is called "quasi-rent," and, if short-run factors were the only relevant ones, the imposition of a differentially higher tax on pure land might exert less economic effect than a tax on other assets. But if longer-run considerations are taken into account, there would seem to be little grounds for making any distinction.

The ideological bases for the taxation of property no longer exert major influence on the reforms proposed for modern tax institutions. Historically, these factors explain the taxation of land values in a differentially discriminatory fashion in some jurisdictions. In the modern era, immobile property, including land, tends to be subjected to higher effective rates of property taxation for much more practical reasons. Immobile property can be taxed more easily; the tax is far more difficult to evade, and less intergovernmental competition for tax sources can take place.

CONCLUSION

If income is defined consistently, income taxation and capital taxation are equivalent and one may be converted into the other without difficulty. As these two taxing institutions exist, however, the conceptual underpinnings are different. Hence, they become different taxes and exert different economic effects. The income tax is a personal tax; the tax on capital is not personal. But when considered together as parts of an over-all fiscal system, the two taxes have offsetting faults. The income tax tends to discriminate against labor incomes; the capital tax in favor of labor incomes.

The modern property tax may be traced directly to the earlier ideas on the role of land in the economy. The physiocratic idea that land was the only producer of a surplus, and the Ricardian theory of land rents were influential in shaping public opinion and policy in the nineteenth century. The efforts of Henry George and his followers to introduce a system of single taxation were not wholly successful although they were not without significant impact. The modern

theory of economic rent suggests that the surplus return, embodied in the idea of economic rent, may be received by any resource. There is no particular economic reason why land should have ever been subjected to differential taxation. The modern reason why immobile property is taxed more heavily is considerably more simple. The property tax is used largely by local governments. Land and immobile property generally cannot easily escape taxation, and local governments find that intergovernmental competition in property taxation, although severe, is less damaging than other forms of taxation.

Chapter 34

THE PROPERTY TAX

Property taxation is the primary revenue source for local units of government in the United States, producing more than 85 per cent of all tax revenues at this level. Property is not subjected to federal government taxation, and state governments have in recent decades shown an increasing willingness to leave this important revenue source to local units. Collections from property taxation currently make up more than 10 per cent of total tax collections for only three state governments. A reasonable estimate suggests that almost $15 billion was produced by property taxation in 1960 in the United States, and this total should exceed $20 billion by 1970.[1]

THE DEFINITION AND CLASSIFICATION OF PROPERTY

The general tax on property, as it is usually administered in the taxing jurisdictions of the United States, is a nonpersonal tax. The tax is imposed directly on the value of assets. Before we can discuss the problems that arise in the process of valuation, issues of definition and classification must be raised. What constitutes taxable property? What assets are to be included in the tax base? What assets are to be exempted? How are the different types of assets to be classified?

The *ad rem* or nonpersonal nature of property taxation suggests that certain restrictions should be placed on the conception of taxable property. This characteristic of the tax should, on any consistent application, exempt from the tax base all personal or individual assets which represent claims against the income from real assets but which do not embody legal title to the real assets themselves. Consistent ap-

[1]Projections for 1970 ranging between $20.6 and $21.9 billion have been made by Dick Netzer. See Netzer, "Financial Needs and Resources over the Next Decade: State and Local Governments," in *Public Finances, Needs, Sources, and Utilization*, to be published by the National Bureau of Economic Research.

plication of the property tax should, therefore, exempt *intangible* assets from the tax base. Intangible property is defined to include such items as shares of stock in corporations, bonds, mortgages, notes receivable, and claims against the federal government in the form of money.

All physical or tangible assets, including both real property and personal property, should be included in the tax base if the conceptual bases of the tax are to be consistently applied. These tangible assets include, first of all, *real property* which is technically defined to include land and permanent improvements to land such as buildings, fences, and irrigation systems. Real property is essentially immobile property, at least it is during any short period. Second, tangible *personal property* should be included in the base. This category covers such items as automobiles, furniture, jewelry, and furs, for individuals, and raw material and finished goods inventories, for firms.

Fully consistent application of the tax on capital would allow no exemptions of any real assets from the tax base because of personal or occupational characteristics of the property owners, and all assets would be subjected to a uniform rate on real value. As is normally the case, however, consistency has never been one of the virtues of institutions that emerge from democratic political process. Property taxation has never satisfactorily resolved the question of defining taxable property. As shown in the preceding chapter, land has always been assigned a unique place in the tax base, and the property tax arose out of early attempts to tax land and other specific types of property. As the tax base was broadened, the tax became more general, and the idea of a *general property tax* was widely accepted. This violated the implied exemption of intangible property implicit in the tax itself. General property taxes were extended to include not only real assets, valued in gross terms, but also claims to the income from such assets. In practice, however, it was clear from the outset that intangible property is extremely difficult to tax. When heavy tax rates have been imposed on intangible property, evasion has been widely prevalent. Governments soon found it necessary either to exempt intangible assets from taxation or to classify these assets separately and to subject them to a very low nominal rate of tax.

Whereas the complete exemption of intangible property, with the possible exception of money, seems consistent with the very nature of capital taxation, all items of tangible property should, conceptually, be included in the tax base. But attempts to include mobile

personal property in the tax base at rates applicable to real property have also met with failure. The imposition of the property tax on mobile assets has been accompanied by widespread evasion and a rapid weakening of taxpayer morality, which could only be prevented through the incurrence of prohibitively high costs of administration and collection. The result of this experience has been the movement toward the separate classification of personal property for tax purposes. In some jurisdictions, personal property has been altogether exempted from the tax base; in others it has been taxed at effective rates that are only fractionally as high as the rates on real property.

Broadly speaking, therefore, the so-called "general property tax" has become largely a tax on one particular form of property: real estate—that is, land and permanent improvements to land. Even with the tax base restricted largely to this category of assets, specific exemptions have been introduced that have reduced the revenue capacity of this source. Several states have incorporated homestead exemption provisions through which the tax on owner-occupied residences is either eliminated or substantially reduced. All jurisdictions exempt property owned by certain religious and charitable organizations. And, for constitutional reasons, states and local units cannot impose the tax on real property held by the federal government. This last exemption is very important for certain jurisdictions. The federal government does, in many cases, make payments to the taxing units, in lieu of taxes, but no fully satisfactory arrangements have been yet worked out for this problem.

Within the broad category of real property, several states introduce additional subclassifications for the purpose of discriminating in tax treatment. These classifications may be on the basis of developed and undeveloped land, urban property and rural property, agricultural land, forest land, mining property, and many other possible subcategories. The most important single type of property in the over-all tax base is residential nonfarm real estate, followed by nonresidential nonfarm real estate (mostly business property).

THE ASSESSMENT OF PROPERTY VALUE

Any tax on capital or property must be levied as a rated percentage of money value. Money value provides the only meaningful common denominator in terms of which widely heterogeneous physical assets may be compared and measured. A tax based on weight, size, or any other purely physical characteristic would be wholly arbitrary in impact. The use of money values of assets as the tax base

requires that each asset be assigned some specific valuation for tax purposes. The process of determining the appropriate taxable value for assets, or property, presents some of the most difficult problems in the administration of the property tax. This process is called *assessment*, and the taxable value finally assigned to each asset is called *assessed value.*

There are several alternative approaches to the problem of assessment. It seems useful to examine each of these in general terms before going on to discuss some of the more practical problems faced by the tax assessor. To the economist, the value of any asset is determined by what that asset can command in exchange on the market. This approach suggests that the assessor should look initially at market prices for assets as representing appropriate values for purposes of determining tax liabilities. For assets falling within reasonably homogeneous groupings, and for which markets are reasonably perfect, assessment based on direct market values or prices is a very simple procedure. To take one of the more obvious examples, suppose that the task placed before the assessor is that of valuing shares of General Motors common stock. He would have to do no more than note from the financial page of his daily newspaper the market value of this stock on the relevant assessment date. But assessment problems rarely arise in connection with such readily marketable intangible assets, which are relatively unimportant in the total tax in any case. To some extent, direct market quotations can be applied in valuing certain items of personal property. In the case of automobiles, for example, the so-called "Blue Book" estimates for market prices may be the best guide for tax assessment purposes.

The most important items of real property in the tax base present more difficult problems of assessment. Separate items may be quite distinct, and market data on comparable assets may be absent, or at least far from perfect. A market approach may still be helpful. Let us take an example. Suppose that the problem is that of assigning a taxable value to a particular building on a particular street corner, the assessed value to include both the land itself and the improvements on the land. Records indicate to the assessor that the ownership of the property has not changed hands in a quarter century; there is no recent market price recorded for this property. The assessor may search for recent transfers of property which he considers to be roughly similar to the item to be assessed; and he will have to decide on the criteria by which he determines whether or not other items are "roughly similar." Data gathered from transfers of similar items

of property can be very helpful, but they can never be wholly satisfactory since the assessor must recognize that each particular item of property has its own peculiar characteristics.

A supplementary approach to the one suggested is indicated. The capital value of any asset is determined by discounting an anticipated or expected earnings stream by some appropriate rate of discount to arrive at a capital sum. If an available market for homogeneous assets exists, this capitalization process is done by the separate traders, and the appraiser need not undertake a separate capitalization. But if the market is highly imperfect, the assessor may find that the direct capitalization approach is helpful. He may find it considerably easier to estimate the net rental value of a piece of property than to estimate the capital value directly. By taking an estimated rental value for a year, adjusting this as necessary over a reasonable life for the asset and allowing for the accumulation of depreciation charges, the assessor may capitalize this value into a capital sum. This process provides him, or should provide him, with a rough check on the market price data available to him. Again an example may be helpful. Suppose that the tax assessor estimates with some reasonable degree of accuracy that the rental value of a particular structure is $10,000 per year. This is a net rental over and above full charges estimated to cover maintenance and depreciation. Using, say, a 5 per cent rate of discount, a capital value of $200,000 is estimated for the structure. If the assessor then observes that property items which he considers roughly similar have been recently transferred at prices not too far distant from this estimate, he will have accomplished his task of finding a suitable evaluation. On the other hand, if his capitalization estimate should be far off the mark in comparison with transfer values, this discrepancy should indicate to him that something further needs to be investigated.

In some cases, the capitalized values of current rentals will fall far short of the market value of the property. This is especially true with land units that are being held for purposes of appreciation in value. For example, an individual may own a very valuable block in a rapidly growing suburban shopping area. He may retain this property as a vacant lot. The actual income received from the property is zero, and the capitalization process would indicate that the property has no capital value. Yet it will be evident to everyone that the property is very valuable. In this case the assessor must rely, as best he can, on transfer prices on comparable pieces of property. Property held in this way for purposes of appreciation in market

value should be assessed at the same percentage of actual market value as all other property. If too much reliance is placed on the income from property, such items will tend to be assessed relatively too low, and this low taxation will tend to encourage owners to hold the property even longer for appreciation purposes. Property assessment for tax purposes should not be used directly as a means for encouraging or discouraging the development of real property. In many cases, rational investment criteria both from an individual and from the social point of view suggest that particular items of property be held in undeveloped stages for considerable periods of time. The tax assessment should not deliberately discriminate against such units of property with the purpose of accelerating development. But one of the costs of holding property undeveloped is the tax which is foregone. A neutral assessment procedure must, therefore, assess undeveloped property at approximately the same percentage of actual marketable value as developed property. A policy of assessing undeveloped real property at lower values, because of the absence of current income earnings, will tend to prejudice development in an uneconomic manner.

To this point was have discussed the assessment problem from the approach of the economist. An alternative approach taken might be that of the accountant. Property items tend to be carried on the balance sheets of firms, and of families if they keep balance sheets, in terms of original cost values. The assessor will have reasonably good access to data on original costs of each asset, or on the costs of purchase by current owners. He may be tempted to rely on this relatively simple means of assigning assessed valuations to property. In a period of over-all economic stability, this method of assessment will not produce serious errors. It will fail to take into account the changing values of property which accompany changing land-use patterns within an area, but, aside from these, property values will tend to remain roughly stable over time. However, in a period of economic instability, either one of general depression or of general inflation, this approach to tax assessment is wholly unacceptable.

In a period of general and gradual inflation, which seems more relevant to current problems of assessment, valuation of property at the original cost to current owners (or some fraction thereof) will tend to cause older properties and long-occupied properties to be undervalued relative to newer and recently transferred properties. There is considerable evidence to indicate that this distortion in assessments is quite common in most jurisdictions. Secondly, and

perhaps more important than the distortion among separate items of property, the total assessed valuation for the taxing jurisdiction will not rise as the inflation proceeds. This method of assessment will more or less automatically cause the effective rate of the real property tax to fall as the general inflation continues. The inflation in property values generally will be reflected in the assessed valuation only insofar as new or recently transferred properties enter into the base. A significant lag may appear between the actual inflation in property values and a proportionate inflation in assessed values. As the general inflationary movement becomes more severe, the original cost approach to assessment will become increasingly less useful and tax assessors will reluctantly discard it for old properties. But the lag between the occurrence of inflation and the recognition of the inappropriateness of the cost approach to assessment may be sufficient to cause severe financial crises for local units relying heavily on property tax revenues.

When the practical magnitude of the assessment task is recognized, additional reasons for the reliance on the original cost approach become clear. We have more or less assumed, in the foregoing discussion, that the tax assessor starts out, *carte blanche*, to place a value on every item of property in his jurisdiction each year. To do this task properly would require far more resources devoted to assessment than governmental units have so far committed. The tax assessor, in the usual case, follows one simple rule that reduces his task to manageable dimensions. Once a piece of property is placed on the tax rolls at an assessed value, the assessor will tend to leave this property at this same value from year to year. This forces the task of actual evaluation, or assessment, on the administrative official only in the case of new or recently transferred property. This practice of retaining the same assessed valuation for property units from year to year has the same effect, of course, as the valuation of such property in terms of original cost. In an inflationary period, serious lags are created between the actual inflation and the rise in aggregate assessed valuation.

ASSESSED VALUES AND REAL VALUES

The fundamental problem in assessing property for tax purposes is that of determining the relative values of separate assets. This relative evaluation can only be done in terms of "real" values, that is, the estimated equivalents to market values. When we consider the actual assessment procedure, however, we find that property is very

rarely assessed at 100 per cent of its "real" or market value. By tradition and convention, local governments tend to assess real property at varying percentages of value. In some jurisdictions, and for certain types of property, the ratio of assessed value to real value may fall well below 20 per cent; in other jurisdictions, and for other types of property, the ratio may approach 100 per cent.

In the abstract, there seems to be no logical reason for this practice. The assessor must estimate the real value of property before he can calculate a percentage of this value; full value assessment would not make the assessor's task more difficult. Assessment at full value would increase the total amount of taxable property within the jurisdiction, and, in order to provide the same revenues, tax rates on assessed value could be lowered. The rational property owner should be indifferent between paying a tax of 1 per cent on full value and a tax of 2 per cent on 50 per cent of full value.

This argument would hold true if local units of government employing the property tax were wholly independent of each other or of the state governments. This independence does not exist, and it is in the relationships between units that at least some of the explanation for the low ratios of assessed to real values are to be found. Local governments finance a sizable share of their own expenditures from funds received as transfers from the states. State transfers to the local governments for education, for roads, for health and welfare, and for similar services, must be made on the basis of some formulas for apportioning funds among separate local units. These formulas, always subject to political pressures from conflicting interests in the separate local jurisdictions, have normally come to be based on certain simple, but definite, quantitative measures. The size of population in local jurisdictions is a popular criterion, and the *total assessed valuation* of property within the local unit has been a second very common measure determining local shares of both state aid funds and direct state outlays in the units. By assessing property within its own borders at some percentage of full value, or at lower percentages of value than other local units, a single local government can increase its share of state aid funds. In effect, the citizens of this unit can, in that way, shift a share of their taxation to citizens of other units.

This practice cannot be successfully undertaken by all local units simultaneously, and competition among local governmental units in reducing assessments has required that many states take action to impose certain restraints. Largely for this reason, state

governments have set up various means of insuring that assessment practices and procedures in the separate local units are standardized or equalized. The movement for state equalization followed the movement toward interunit competition; therefore, the low ratio of assessed values to real values remains characteristic of most property tax systems.

REVIEW AND APPEAL OF ASSESSMENTS

Under the income tax in the United States, the primary reporting responsibility is placed on the individual taxpayer. He must report his own income accurately, and severe penalties are imposed for inaccuracies and omissions. The property tax is wholly different. Normally, the individual property owner is under no obligation to make a personal declaration concerning the value of his own assets. (One suggested reform in property taxation has embodied individual assessment as a central feature, coupled with some specified collective rights of purchase at some percentage of individually declared values.) The valuation, or assessment, is left to the tax assessor, as administrative official of the taxing government. The assessor is assigned the task of placing a value on each unit of property, and the final tax must be paid as a designated percentage of this assessed value.

The individual property owner may not desire to accept the judgment of the tax assessor. To provide the property owner with an opportunity to have the assessment reviewed, a formal channel of appeal is to be found in the structure of most taxing jurisdictions. The property owner may appeal to a specially constituted board, and if he is successful in demonstrating that his property has been assessed at a value in excess of that placed on comparable property in the jurisdiction, he may secure a reduction in his tax liability. Tax assessment offers an example of an established institution in which individual appeals from administrative decisions have been substantially formalized through the process of special review.

THE SETTING OF TAX RATES

Property tax rates are determined by both the needs of the taxing governments for revenues and the assessed valuation of property. The rates may be imposed so as to cover all revenue needs, but normally they are broken down with separate shares of the combined rate attributed directly to the financing of the separate governmental functions. Rates are usually stated in terms of mills per $100 of

assessed value, or cents per $1,000 of assessed value. A basic rate will normally be levied for general expenditures, and this will be supplemented by special mill rates for schools, for roads, and other itemized expenditure categories. As we shall note at a later point, this procedure tends to bring the actual cost of the separate governmental programs more closely to the attention of the taxpayer than is the case with any other tax institution in the over-all United States fiscal system.

A distinction must be made between the nominal rate of tax and the effective rate of tax based on real values. The nominal rate must be the same for all units of property within the same tax classification. In this sense, the tax must be proportional in rates within single asset classes. Effective rates, on the other hand, may vary substantially even within property classifications due to differential ratios of assessed values to real values. As a result, the effective rate structure need not add up to proportional taxation. As suggested, tax classification, both formal and informal, makes the effective rate on real property much higher than on personal property. Assessment procedures tend to make effective rates on newly developed property higher than on old property. And there is evidence that effective rates are higher for property falling within lower price ranges than for property falling within higher price ranges. This discrimination is explained partially by the fact that market value data are more readily attainable for the more homogeneous lower-priced assets, and by the fact that the owners of higher-valued assets can afford to bring more pressure to bear on the assessor in an attempt to secure favorable evaluations. It seems also to be true that the property of business firms tends to be subjected to a higher effective rate of tax than is property owned by individual citizens. This discrimination seems especially to hold with respect to the property owned by large corporations. Local units of government have tended to place high effective rates of tax on assets owned by railroads, electric power companies, and similar utilities. Certain types of business property are, in turn, differentially favored in terms of effective rates. Local jurisdictions seeking to expand the industrial bases of the community have, in many cases, exempted the property of new firms from the tax base.

The property tax is employed largely by local governmental units. This fact makes any estimate of an *average* over-all effective rate on all property very difficult and of questionable value. Not only do the separate units impose different effective rates because of assessment differences; they also classify property differently as among

the separate states. An extremely rough attempt may be made at indicating the average effective rate, however, and this may give some indication of the over-all significance of the tax. If we accept the figure of $15 billion as being a reasonably good estimate for total property tax collections in 1960, and if we further estimate that national income in that year was $400 billion, we can begin to make some estimates using the capital tax–income tax comparison developed in Chapter 33. If we assume that labor income makes up three fourths of total national income, this leaves a total of $100 billion produced by nonhuman or capital assets. In order to raise a revenue of $15 billion, a supplementary income tax would have to be imposed on this income at an average rate of 15 per cent. If we further assume that the real rate of yield on capital is approximately 6 per cent, this 15 per cent tax on property income becomes equivalent to a tax of approximately 1 per cent on property value. This extremely rough calculation suggests that the tax on nonhuman capital represented by the property tax is about 1 per cent, on the average. An increase in the rate of discount would increase the estimated rate slightly, and an increase in the share of national income attributed to labor would also increase the rate slightly. If the value of real property should be separated from the value of personal property, the effective rate would be above this general average. Real property in urban areas of the country may be subjected to an average effective rate exceeding 2 per cent.

ECONOMIC EFFECTS OF PROPERTY TAXATION

The economic effects of property taxation depend to a large extent upon the generality of coverage. A general tax, levied equally on all real assets, would exert substantially different effects from a tax that is imposed at different effective rates on different types of assets, or which is concentrated on particular types.

Effects of a General Capital Tax

The effects of a general capital tax have already been discussed to some extent in Chapter 33. A tax which includes all real assets in the tax base, and which bears equally on all items, may exert two primary effects. First of all, the tax will act to reduce the net productivity of investment generally. Insofar as this reduction in the marginal rate of return on capital causes individuals to save less income and to use up more income in consumption, the rate of economic

growth is retarded and the burden of the tax is partially spread out or diffused among all the members of the social group. As suggested when the corporation income tax was discussed, however, the positive relationship between the net yield rate (the interest rate) on capital and individual decisions to save cannot be shown to take place, either on the basis of deductive reasoning from simple postulates about human behavior or from the scattered empirical evidence that is available. The most satisfactory assumption would appear to be that effects of the property tax in reducing the over-all rate of saving and investment in the economy are not significant.

A second primary effect may be that of generating an important shifting of investment. As the analysis in Chapter 33 showed, assets in the form of human earning power tend to be differentially favored by the property or capital tax. This implies that some shifting of initial investment from the production of real assets to the furthering of the human asset values might take place as a result of the tax. The investment in human beings, typified by educational expenditures, might be increased at the expense of investment in real capital. The degree to which investment decisions between these two broad alternatives represent effective substitutes at the margin and, in this way, affect individual behavior, is highly speculative. Some shifting of savings between the two forms of investment can, no doubt, occur. But, on balance, the amount of shifting of investment funds between real capital formation and human capital formation that might be specifically caused by the tax on capital seems to be of minor significance.

If these two primary effects are held to be insignificant, a truly general tax on all real assets exerts little influence on individual behavior. This is the same as saying that the tax cannot readily be shifted. It must be borne by those individuals who *hold assets through time.* These individuals cannot modify their own behavior in any way to effectively shift the tax burden to other groups in the society.

It is necessary to determine quite clearly just who the damaged groups are in this case. In order to analyze this point carefully, we must introduce the idea of *tax capitalization.* A tax is said to be capitalized when its burden is concentrated in time on the current owner of property. The general property tax is often held to be capitalized, or substantially so. The analysis proceeds as follows. The imposition of the tax on real assets will reduce the net income from those assets through all subsequent time periods. Since the capital value of an asset is determined by discounting an expected net income

stream, the tax will have the effect of reducing immediately upon its announcement the capital value of the assets. The current owners will be subjected to the full burden, and all future purchasers of the assets will escape taxation since they will pay no more than the reduced capital value. The tax will have become capitalized into the lower value. We shall return to this phenomenon of tax capitalization at a later point, but this brief introduction is sufficient to indicate its inapplicability to the case of general taxation of capital. While it is true that the capital value of an asset is determined by discounting an expected earnings stream and equally true that the tax will reduce all expected net earnings, *if the tax is truly general in impact* all earning assets will be similarly affected. The rate of interest, or rate of discount, is determined by the rate of yield on capital investment, the productivity of investment. Thus, the general tax not only reduces expected net earnings, but it also reduces the appropriate discount rate. If the tax is general, both earnings and the discount rate may be reduced proportionately. If this takes place, capital values remain unchanged. Current owners are not subjected to the full burden of the tax; instead they are subjected to the tax burden only so long as they hold the assets which now earn a similar net income. All holders of assets bear the incidence of the tax, whether they hold the assets during the current period when the tax is initially imposed or whether they purchase the assets later and hold them in future periods. There is no bunching of the tax burden in time, no tax capitalization, *if the tax is truly a general one.*

This is a major proviso, however, and it is difficult even to conceive of a tax which is truly general to the extent that no capitalization can occur. Consider, for example, the case in which the national government imposed a capital tax on all real assets in order to allow a corresponding reduction in the income tax. It seems evident that the offsetting reduction in the income tax would tend to prevent the effects postulated from happening. The income tax also reduces the net yield from capital, and, insofar as this is reduced, the impact of the capital tax on the rate of yield is offset. The analysis becomes somewhat more complicated in other cases, but the important point to be noted here is that the property tax, as it exists, is not a general tax on capital. Hence, some tax capitalization can occur. In order to examine this process more clearly, we need to move to the other extreme and analyze the effects of a tax imposed on only one type of property.

Effects of a Specific Property Tax

Let us suppose that the property tax is defined to include only one type of property in the tax base. To simplify our analysis, we assume that the tax is levied on urban residential property only, and that the tax is levied by only one local unit of government. All surrounding governmental units are assumed to raise revenues in other ways.

In this highly simplied model, the process of *tax capitalization* can be clearly traced. Immediately upon the imposition of the tax, the current owners of urban residential property in the taxing jurisdiction will be subjected to a capital loss. No prospective purchaser of property in that district will pay more for a unit of property than he could earn from a similar investment elsewhere in the community. Capital values of taxed property would immediately be reduced. The discount rate used in determining these capital values would not be affected since this rate would be determined in the whole economy.

Insofar as the investment in urban residential property tends to be long term or quasi permanent, the current owners at the time of the tax may be subjected to sizable capital losses. If, in fact, the property were genuinely indestructible, there would be a full capitalization of all future taxes onto the shoulders of current owners. They could not shift even a portion of the tax to future purchasers of property or future renters of residential units. In an economic sense, however, little property is genuinely indestructible. Therefore, as time passes, original owners may be able to shift a portion of the tax burden by failing to maintain the property. As the value of the property depreciates, and as old units are taken off the urban residential market, rents go up in the area, and the renters of residential units begin to bear a portion of the tax. Over a long time period, the tax will be shifted to all users of residential property in the area. But the capitalization process will have the result of concentrating a substantial portion of the tax burden on the owners of quasi-permanent property at the time of the original imposition.

The contrasting results follow from a reduction in a long-established tax. Since the demand for residential accommodations will not be changed, there will be no change in rentals. The windfall gain from the tax reduction will tend to be enjoyed by the owners of property at the time of the tax reduction, and these owners will continue to enjoy these gains until such time as new resources can be invested in real property in the community.

Effects of Actual Property Taxes

The existing pattern of property taxation in the United States falls roughly between the two foregoing extreme models. The tax does not apply generally to all real assets, and there is much differential treatment. On the other hand, the tax is sufficiently general in application to affect the over-all productivity of investment. It is levied by almost all local units of government. The effects of the tax, therefore, seem to represent some combination of the separate analytical results reached with the two contrasting models.

The tax, along with the tax on corporation income, tends to reduce the rate of yield on capital investment generally. The concentration of the tax on real property, real estate, however, tends to exert important capitalization effects. The fact that the tax has existed for many years suggests that these effects have been largely dissipated. There seems little doubt but that the level of rents, along with the annual cost of owner-occupied homes, is higher now than it would be if the property tax were not such an important part of the American fiscal system. On the other hand, a reduction in this tax would not substantially benefit the consumers of housing in the short run. Many years would be required before the added supply of housing would be forthcoming; the reduction would provide windfall gains to owners of property. This explains the adage that is often applied to the tax: "An old tax is a good tax."

Some students have criticized the real property tax on the grounds that it discriminates especially against the consumption of housing services. This tends to make the ultimate effects similar to a regressive tax since the poorer families spend a somewhat larger share of their income on housing. The differential treatment of real estate in comparison with personal property in most jurisdictions does tend to place a premium on investment in such personal items of property as automobiles, furniture, and appliances as opposed to investment in residential housing. The effects are similar to those that would be forthcoming from a specific excise tax on the consumption of housing. This discrimination against housing is offset for the owner-occupier when the federal income tax is considered in combination with the property tax. The income tax allows the homeowner to deduct interest on his mortgage but does not require that he impute an income from housing services that he receives. This premium on homeownership, or rather on individual investment in housing construction for owner occupation, is perhaps sufficient to outweigh

ompletely the effects of the property tax. In those jurisdictions that clude homestead exemptions in the property tax, the combined ffects of the federal income tax and the local property tax tend to ncourage investment in owner-occupied housing. Where the two xes (federal income tax and local property tax) combine is in eir discrimination against both the owner of rental property and e prospective tenant.

EAL PROPERTY TAXES AND COLLECTIVE DECISIONS

Real estate is taxed differentially under the property tax largely ecause it is the only base upon which municipal and local govern-ent taxation can be feasibly erected. Although investment and dis-vestment in real estate can take place, the processes require time. ax evasion is difficult, and tax shifting is a long-run project. Property xes on real estate have come, therefore, to be looked upon by fiscal eorists as more or less a necessary evil in the whole tax structure. n the basis of considerations of equity, the tax on real property has ttle to recommend it as it is actually administered in the United tates. However, when the tax is viewed in the light of the tremendous fficulties of organizing collective action, it has certain merits that re absent in other tax institutions. First of all, like the income tax, is a direct tax. The incidence of the tax, at least in the short run, predictable in advance. Local property owners know full well that n increase in the tax rate will fall largely on their shoulders. Sec-ndly, the tax, as it is administered, can be broken down and separate tes, mill rates, applied to each public service or function. Rarely taxpayers get this sort of opportunity to weigh the relative costs the separate public functions one against the other. Finally, with-t the tax, the local unit of government, as an independently func-oning agency, would be likely to disappear. And clearly for many the more specific public functions, decisions can be more rationally ade at the local government level than at any higher level in the olitical hierarchy. These points suggest that the tax on real property, hile undesirable on equity grounds, finds considerable support in rms of other objectives which must be considered in any over-all aluation of a fiscal structure.

Part VIII

INTERGOVERNMENTAL FISCAL RELATIONS

Chapter 35 FISCAL AND ECONOMIC ASPECTS OF FEDERALISM

The United States fiscal system cannot be adequately discussed as a single, integrated unit; this should be evident from the organization of the preceding parts of this book. The division of fiscal authority between the federal or central government and the state governments, a division which is an essential feature of the political structure, has exerted and still exerts important influence in shaping the tax and expenditure patterns. The political system of the United States is that of *federalism*, characterized by a constitutionally protected division of sovereignty between the whole nation of citizens organized through the central government and the people organized through the separate state governments. The individual citizen is at once a citizen of both the United States, as a national unit, and his own state of residence. Both of these governmental units possess the legal power to regulate and control his activities, and to impose restraints on his behavior.

It would, of course, be incorrect to imply that the division of power between the federal government and the state governments is permanently drawn along readily predictable lines. The political changes of the last quarter century along with the constitutional interpretations of these have sharply narrowed the independent authority of state governments and have correspondingly expanded the political responsibility of the central or federal government. Despite this acknowledged secular drift toward the centralization of political power, the polity remains *federal* in nature. The student of the whole fiscal organization makes a serious mistake if he ignores or neglects unduly this fact in evaluating and appraising the particular characteristics of the system.

INDEPENDENT FISCAL AUTHORITY

The independent political authority of the federal government and the states implies independent fiscal authority. The meaning of this independence may be made clear by contrasting a federal political system with both a federation of states and a genuinely unified government.

In a federation of independent states, as opposed to a federalism, the central governmental unit would possess no independent fiscal authority at all. This unit would have no power to levy taxes directly on the income or wealth of the individual citizen. Revenues would be collected from individuals by the independent states, and these states would then make contributions in support of the central government. The individual is responsible directly only to one unit of government. NATO is an example of a federation of nations organized for a single purpose. The central body has no real political independence; therefore, it possesses no fiscal authority.

By contrast, in a genuinely unitary state, the central government possesses the exclusive political and fiscal authority. The individual may be subjected to local governmental regulations and to local governmental taxes, but these units exist and perform their public functions only as "agents" of the central government. They cannot be said to possess genuine fiscal independence. It is the absence of ultimate fiscal authority in local governments that makes the relationship of local units to state governments wholly different from the state-federal relationship. In any unitary system some actual fiscal independence is granted to local units for reasons of efficiency in operation. Hence problems of intergovernmental coordination do exist. But the constitutional separation of fiscal authority between the federal or central government and the states in a true federalism serves to make the problems of fiscal adjustment more basic and more complex.

THE ECONOMIC ASPECTS OF FEDERALISM

If political authority is to be divided among levels of government, the first problem is that of determining the appropriate public functions to be performed at each level. As suggested in the discussion of preceding parts of this book, the line of division of function is not always clearly drawn. Broadly speaking, however, the federal government provides those public services that benefit the whole national population, while state-local units provide those services that are more

divisible geographically. It is necessary to emphasize at this point that the existing division of responsibility between the federal and the state governments has *not* been drawn primarily for economic reasons. The reasonable efficiency that seems to characterize the division of responsibility attests, however, to the importance of economic considerations in shaping the fundamental institutions of the fiscal system. It will be useful here to consider some of the purely economic considerations in dividing political responsibility among the separate levels of government, although these considerations must be recognized as being of relatively minor importance in some cases.

Governments come into being, at least in an economic sense, in order to provide collective goods. These are defined as goods and services which yield certain indivisible benefits. That is to say, the availability of a collective good becomes equal to all citizens once the good is provided. The policeman on the corner protects the jewelry store as well as the hardware store; the Skipjack provides me with the deterrent protection offered by a nuclear-powered submarine as well as any other citizen in the United States. The benefits of such goods are indivisible in the sense that one person cannot receive such benefits without their being made available at the same time to others.

The two examples used in the preceding paragraph point toward an initial answer to the problem posed. National defense is quite clearly a responsibility for the federal government, the only unit which includes the whole national population. The protection afforded by the defense forces-in-being applies equally as well to the sun-drenched citizen of Florida as to the sportsman of the Northwest. The externalities, the spillover of benefits, extend to the whole national population. Therefore, for collective goods and services like national defense, there is an economic reason for having these provided by the central government. No doubt Texas could support a defense force of its own, as could the other states. But as a protection against external or foreign aggression, no single one of the separate states would provide sufficient investment in defense because of the spillover effects of individual state action.

By contrast, the policeman yields protection to only a rather limited group of citizens. This remains true even if we recognize that a "police force" may be a more efficient method of organization than units of single policemen. The benefits that the citizen of Rhode Island receives from the policeman on the Boise, Idaho, street corner are infinitesmally small. The spillover effects, the externalities, in this case extend only to the citizens of the local units of government.

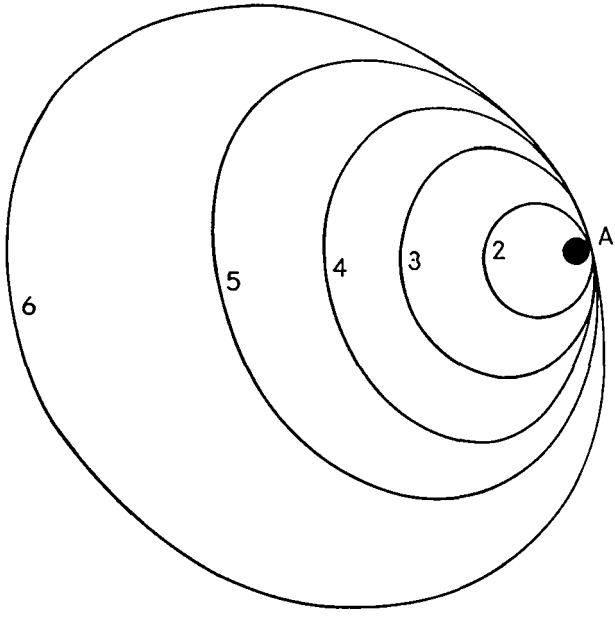
The implication is clear that the provision of police protection is a local government function. There is no reason at all for the federal government, at least no economic reason, to provide police protection.

These two examples suggest that the economic or efficient division of responsibility among the separate levels of government depends upon the geographic range of the spillover effects of collective action. Each collective good or service is "collective" to only a limited group. The extent of the group determines the "economic" size of the governmental unit which should perform the function.

This approach may be illustrated easily by a single diagram, Figure 35–1. The position of the individual citizen is shown at point

FIGURE 35-1

Illustrative Model for Determining Size of Collective Unit for Performance of Public Functions



Illustrative examples:

A. Private goods and services.
2. Local recreational facilities.
3. Fire protection.
4. Judicial system.
5. Education.
6. National defense.

A. For the great bulk of private goods and services, the actions of the individual do not directly affect the utility of any other individual or family. If the individual at A purchases a television set, he pays the costs individually and he receives the benefits individually. External costs and benefits are not imposed on other citizens; there are no genuine spillover effects. The whole of the private market transactions may, therefore, be conceived as taking place at point A, and this is shown by the large black dot on the figure.

As soon as spillover effects do begin to appear, we move into the area of collective goods. Suppose now that the local community desires to construct a park; the park once available will be large enough to accommodate several families at once. Therefore, the appropriate-sized unit for constructing and maintaining the park will be, let us say, 100 families. This may or may not be a governmental unit as such. The important point is that this action will be collective rather than individual. This sort of local collective activity is shown by circle number 2. The circle is more extensive than the single dot. The range of the collective aspects of the public park extends over the whole 100 families.

For fire protection, the community appropriate for purchasing this may be somewhat wider than that for the park. This is shown by circle 3. We may progressively build up our set of circles or ellipses, drawing one for each public function until we reach the largest of all, which is that for national defense.

From this oversimplified view, the most efficient way of providing each of these services alone would be for the governmental unit or the collective organization to be organized in the size indicated by the range of the service. However, several major qualifications must be introduced at this point, even if we continue to concentrate on the economic aspects of federalism alone.

In the first place, it should be noted that the external effects that are relevant to determining the appropriate-sized unit are those which are present on the demand or consumption side only. Take the example of the public or community park. One hundred families in a particular suburban development can utilize a park collectively; for this limited group the park may be genuinely collective. This fact alone suggests that a collective organization, either governmental or private, of this size should be formed to finance the services of a park. This externality in consumption does not imply that the most efficient

means of providing park services is for the local community to produce park services directly. This *production* decision should be considered quite independently, and the most efficient means of securing the required services should be chosen. The efficient production unit may happen to coincide with the range of collectivity in consumption. In this case, the local community will purchase the property, improve it, and maintain it as a public park. On the other hand, the most efficient means of securing the local park facilities may be for several communities to join into an agreement whereby common maintenance facilities and equipment can be provided. The economies of scale may require that there be some extension of the productive units beyond the range of consumption externalities. Finally, the most efficient means of securing the park facilities may be for the local community to purchase or lease these facilities directly from private industry, and to negotiate contracts for service and maintenance with private firms. The decision among these separate alternatives should be based primarily on cost considerations; the collective service should, in all cases, be secured by the collective unit at the lowest possible cost. In this respect, the collective or governmental unit is not in any way different from the individual consumer in the private economy.

A second important qualification of the model arises when it is recognized that the organization of decision itself is expensive. The larger the group, the more costly will be the making of collective decisions. Ten people can reach agreement easier than one hundred. The recognition of this fact suggests that the "optimal" sized governmental unit will not normally be so large as that suggested by the full range of the externalities. "Efficient" organization of a political structure must reflect the costs of decision making as well as the costs expected to arise from the presence of external effects in consumption.

A third major qualification to the simplified model may now be discussed. The approach suggested implies that the appropriate collective unit be of a different size for each collective service provided. The extension or range of the externalities in consumption need not, and probably would not, be the same for any two particular functions. But the very organizational costs of instituting collective action must be reckoned with. Only for the most important collective functions will a wholly independent organization be justified on cost grounds. For the lesser public functions, the same collective unit may be required to provide several or all of the functions even though

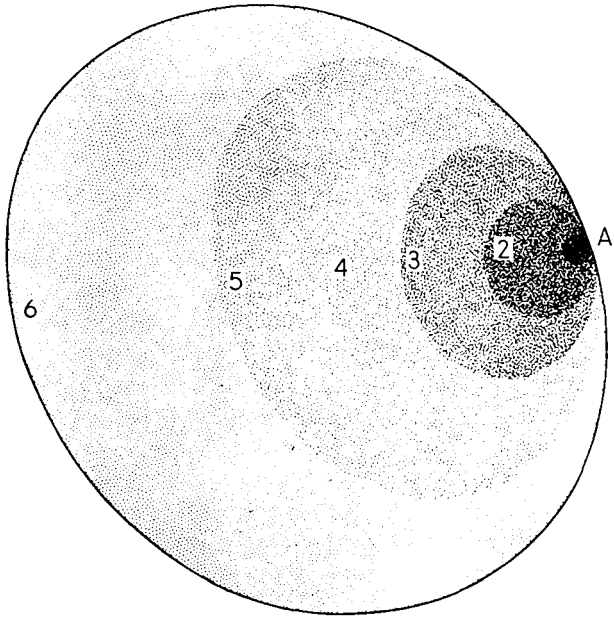
the unit may not coincide with the most "efficient" unit for organizing any one public service. For example, many of the public services must, because of the organizational cost involved, be performed by cities and counties in the United States. The range of externality in consumption extends in many cases beyond the limits of county or city boundaries. In other cases, the range of externality is much more limited than the whole area of the local unit. But the costs of organizing each activity separately would be greater than the promised added benefits from alternative organization. Some efforts have been made, and continue to be made, toward bringing actual governmental boundaries somewhat more into line with the extension of the externalities in consumption. For example, several major metropolitan areas have recently sought to combine local units for the performance of certain public functions.

A fourth important qualification to the simplified model presented in Figure 35–1 and the discussion surrounding it involves the recognition that the range of externality in consumption of collective goods is never precisely determinate. As Figure 35–1 is drawn, the lines clearly and distinctly separate those individuals within the circles from those without. In the park example, only 100 families are included within the collective group; all others are excluded. In the real world, however, collective goods and services are not consumed in this way. The great part of the benefits from the park may, in fact, be enjoyed by the 100 families in the suburb. But the fact that the park tends to keep children from roaming over other areas of the city and countryside insures that there will be further benefits that "spill over" into other communities.

This problem can be most clearly discussed in terms of the collective aspects of educational services. Figure 35–2 may be used to illustrate the discussion. As suggested earlier, education does benefit certain individuals directly, those who are educated and their families. In other words, a significant part of the consumption of educational is not "collective" at all. The benefits are concentrated at point A, just as is the case with any private good or service. It is clear, however, that all citizens in the local community also benefit greatly from the fact that the children of the community are provided with educational facilities. This community benefit makes educational services "collective" in the sense that we have used this term. The heavily shaded area enclosed by circle 2 indicates the extent of the local community. But it is also clear that significant boundaries of the single local community exist. The freedom of migration among

FIGURE 35-2

Extension of Benefits from Educational Services



separate communities means that each single community will be affected by the level of educational facilities made available in surrounding communities. The immigration of poorly educated workers from surrounding areas will not be generally desirable to any single community. Since we know that individuals who migrate tend to migrate for short distances, these effects are more pronounced in communities closest to the one under consideration. But it is also clear that some part of the "collective" benefits from educational services extend to the whole national population and beyond.

This fact raises the very important question as to just where the appropriate boundary line should be drawn. Every citizen in the nation has *some* interest in the educational services provided in every local community in the nation. But the interest of the citizen of Maryland in the educational services in Oregon may be quite slight. The problem is that of determining the point at which the externalities become insignificant enough to warrant drawing a line. And the location of this line will depend on the extent to which the external interest is inframarginal or marginal. The citizen in Maryland may

have some interest in the education of Oregon children, but if Oregon insures adequate educational services independently, the external interest becomes inframarginal. In such cases, no action need be taken to secure the interest of those external to the limited jurisdiction. Only when external interests in the level of performance of a public service exist, and when this interest is exerted *marginally*, should some fiscal adjustment be considered. Only if the citizen in Maryland has some interest in seeing that Oregon children are educated *better than they are being educated* should some organizational change be examined. Even here, the added benefits from additional fiscal centralization must be sufficient to more than offset the added costs of decision making in larger units if organizational change is to be justified on economic grounds.

The extent of national interest, that is, the interest of the whole population, in particular public services performed traditionally by state-local units, looms as one of the most important problems in the current stage of federal-state relationships. To what extent is federal government participation in the provision of educational services justified? The answer to this question must depend, to a large extent, upon the appraisal of the significance of the spillover effects here discussed and upon the comparison of these effects with the costs of organizing activities differently.

ECONOMIC ASPECTS AND POLITICAL REALITIES

The preceding section suggests that an economic approach may be used to determine the appropriate division of authority between the central government, the state governments, and the local governments in a federal political structure. It will be very useful to keep this approach in mind when we discuss particular aspects of the existing system. Broadly speaking, the economic considerations have been important in determining the division of functions that actually exist in the United States. But it would be a serious error to attempt to emphasize unduly the economic basis for the existing structure. The federal government has, to a large extent, always performed those public functions that have genuinely national aspects as contrasted with those functions which are primarily local in nature. But the federal government has also, on many occasions, taken over responsibility for certain activities which seem to be essentially local in nature. The clearest examples here are those federal activities having to do with regional development.

One reason for federal action in regional matters is the absence of any effective political unit of the appropriate size. States are, in many cases, not sufficiently inclusive to perform adequately certain regionally oriented activities, and interstate organizations have not been sufficiently flexible, or so it seems, to meet the needs. The New York Port Authority is the outstanding exception to this general statement.

State boundary lines are drawn arbitrarily from an economic point of view. These boundaries are historically determined, and the public services to be performed must be adjusted to conform to state boundaries rather than the reverse. Various attempts and proposals have been made to adjust state boundaries to conform more closely with economic structure. But state boundaries must be accepted as fact. These boundaries guarantee that states will be economic units when we consider the provision of public services.

The boundaries of local units are much more flexible. Considerable change takes place continually, roughly with a view toward keeping local collective units more closely aligned with ecomonic realities. Significant improvements have been recently made toward enlarging metropolitan areas to take some account of the rapidly growing suburban developments. Further steps are urgently needed; but these need not be overwhelmingly difficult to achieve since local governmental boundaries are, after all, determined by the states.

POLITICAL DECENTRALIZATION AND INDIVIDUAL CHOICE

One important advantage of state-local governmental fiscal independence in a national economy should be especially stressed. The national or federal government encompasses the whole economy, and its activities impose restraints on the whole population. If a citizen happens to be in the minority as concerns a particular issue or set of issues, he can do little to make his situation more favorable. This applies to fiscal action as well as to other action of the federal government.

The same is not true of state or local governmental action. The individual who does not like the results of state or local political action may shift to another area and another locality within the country. The constitutional guarantees against restrictions on interstate commerce insure that individuals can always migrate rather freely within the national boundaries. This opportunity for migration is important in serving as a limit to the exploitation that separate

states or local governments can impose on individuals. In many cases, the alternative is not a real one, and in other cases the individual may migrate only at a high cost. But the possibility of shifting among the states and the local units serves as a very important check on irresponsible state and local action.

This is important in assessing state and local fiscal action, and it exerts both good and apparently bad effects. We have discussed the extent to which interstate competition has arisen in certain parts of the fiscal system. States find it difficult to impose very high taxes on either individual or corporate incomes for fear that citizens will migrate and resources will be shifted to other jurisdictions. Local governmental units find it necessary to rely primarily on the taxation of immobile real property for the same reasons. But the beneficial aspects of this possibility for divergence in state-local fiscal systems do not seem to have been nearly so widely recognized. The freedom of individual choice is greatly extended by this possibility of migration. Individuals and families will tend to be attracted to those localities that combine a tax and expenditure pattern which is the most suitable to their needs. More and more individuals and families are coming to recognize that the tax structure alone should not be considered; this must be considered along with the expenditure side in assessing the advantages and the disadvantages of any particular state and local community.

There exist, of course high tax–high expenditure communities, medium tax–medium expenditure communities, and low tax–low expenditure communities. Individual families value public services differently; some of them place a high marginal value on particular public services; others value public services relatively low compared to privately supplied services. The first group will tend to migrate to the communities that provide the greatest amount of public services, and the families in this group will be quite willing to submit to the higher taxation required to insure that these services are, in fact, provided. The second group will tend to migrate to the community that neither provides many public services nor taxes at very high rates.

To a limited extent, the freedom of migration among the separate states and local units in the nation allows the individual a choice among the different combinations of public services roughly analogous to his choice among private goods and services that he confronts in the market. To this extent, the inherent compulsion that governmental activity involves is reduced, and the over-all range

individual choice is widened. This consideration suggests, of ırse, that, where possible, services should be provided by the tes and local units rather than the federal government. Federal national interest in a particular service should be demonstrably nificant before federal action is taken.

TERAREA DIFFERENCES IN FISCAL CAPACITY

If the national economy were divided into geographic areas of ıghly equal economic potential, and if regional governmental units ere drawn to correspond to these areas, many of the major fiscal oblems of federalism would never arise. In this case, the division function between federal and subordinate units could be drawn ong reasonably acceptable lines, and the multiplicity of local units uld insure individuals considerable freedom of choice. But the isting subordinate units of the political structure, the states and the cal units, do not enclose areas of equal economic potential. There a significant difference in the fiscal capacities of the various units. his fact tends to create a whole set of new problems.

Certain states contain relatively more high-income receivers than her states. Total income and wealth are much greater in some areas an in others, and income and wealth of individuals and corporations ovide the only final source for tax revenues. It follows that the icher" states will find it much easier to finance a given level of ıblic services than the "poorer" states. The "richer" state will have levy a smaller proportionate tax burden on its citizens to finance a ven level of public services than will the "poorer" state. Or, to y the same thing differently, in order to finance the same level of ıblic services, the "poorer" state will, of necessity, have to levy a gher proportionate tax on its own citizens than the "richer" state.

There is a genuine fiscal differential against the poor states and cal communities, and this differential will exert some influence on e locational decisions both of individual families and of business ms. Individual families who move into the poor states or communities can expect to find either higher taxes or a lower level of ıblic services, or both. Individual families who move into the rich ates and communities can expect to find a lower level of taxes and higher level of public services. These general conclusions remain ue in spite of the fact that particular differences in the fiscal system can, of course, always reverse the direction of effect for specific dividual families or firms.

The disparity in fiscal capacity among the separate state and local units within the single national economy suggests the following questions: To what extent should the central or federal government take action to remove these fiscal differentials? To what extent should the federal government assume the task of "equalizing" the fiscal position of individuals in the separate states? If fiscal equalization is accepted as a federal function, should this be general or should it be directed toward specific services?

To a certain extent, the fiscal advantages to be secured by an individual family from living in a community characterized by a concentration of high incomes and wealth are genuine economic advantages. The availability of better schooling for children at a lower "price" in terms of taxes in the "richer" community is similar to the availability of better vacations at lower prices along the Florida beaches. Insofar as these real advantages are present, no attempt by the federal government to "equalize" fiscal opportunities and to remove the differential advantages of the richer areas is justified on purely economic grounds. Other things equal, a more efficient overall allocation of economic resources is achieved by allowing families to move from poorer states to richer states in response to these fiscal differentials.

A portion of the net fiscal advantage or disadvantage from living in a certain area is, however, not genuinely economic. If all state-local fiscal systems were to be organized on a pure benefit basis insofar as taxation is concerned, that is, if the tax-expenditure system of state-local units were ideally neutral in the manner discussed in Chapter 12, then there would be no economic reason for the federal government to try to equalize fiscal differentials among the separate states. States and local units do not, of course, organize their fiscal systems on an ideally neutral or benefit taxation basis. Considerations other than the purely economic enter into the tax-expenditure structure here as well as at the federal level. To a certain extent, although somewhat less than at the federal level, state-local fiscal systems are redistributive in effect. The higher-income receivers transfer real income to the lower-income groups by means of the fiscal process. Insofar as this redistribution takes place within the state-local fiscal process, some uneconomic differentials will be introduced between the richer states and the poorer states. The high-income receiver living in the state where other high-income receivers are concentrated will not be subjected to so great a reduction in his income to bring the low-income groups up to acceptable real income standards as will

his equals in the poorer state. Similarly, the low-income receiver in the high-income state will tend to be differentially benefited as compared with his equal in the low-income state. Therefore, insofar as state-local fiscal systems serve redistributive functions along with those of simply providing collective goods and services, the fiscal differentials among the states will tend to cause an inefficient or uneconomic shifting of resources to the higher-income states and away from the lower-income states. National income, as currently measured, would be reduced by a shifting of economic resources in response to interarea fiscal differentials resulting from purely redistributive activity on the part of states and local units of government.

To the extent that such redistributive activity does generate fiscal differentials among the states, there is an economic reason for the federal government to make some attempt to equalize the fiscal treatment of citizens as among the separate states. Fiscal equalization becomes one means of increasing over-all resource efficiency in the economy. In addition, there are justifications for such federal action on equity grounds. There seems no justifiable reason why an individual resident of the poorer state, just because he is a resident of that state, should be subjected to a greater pressure from the fiscal system than he would be were he to reside in a higher-income state. Since resource returns (incomes) are determined in the working of the whole national economy, the principle of equity, "equal treatment for equals," would dictate a federal policy of fiscal equalization among the separate states, and state policies of equalization among the separate local units of government.

INTERSTATE DIFFERENCES IN PUBLIC SERVICE STANDARDS

Interarea or interstate differences in income and wealth, in taxable capacity, insure that differentials will exist in over-all or "average" fiscal treatment of individuals among the separate states. On the average, any given individual will tend to receive some net fiscal advantage from residence in the state with the higher fiscal capacity. As a rule, this advantage will take the form of both somewhat lower taxes and somewhat higher levels of standards in the provision of public services. But the need for intergovernmental fiscal adjustment has been focused much more directly on interstate differences in the provision of particular public services than upon over-all differences in fiscal treatment of individual citizens. A general policy of fiscal

equalization has never been seriously advanced; there have been numerous proposals for federal action to standardize the performance levels of particular services.

The argument for federal government action to remove interstate differences in the level of provision of specific public services must rest on different grounds from that for federal policy aimed at general equalization of fiscal treatment among the separate states. Insofar as the range of externality of the service, the extent of collectivity, does not extend beyond state boundaries, there can be no reason for federal government support regardless of the degree of disparity in performance among the separate states. Federal equalization measures in support of one specific public service must be based on the argument that the benefits from satisfactory performance spill over beyond state boundaries to the national economy as a whole. The equalization aspects themselves arise from the fact that the federal interest is more important at the margin of provision in the low-capacity states than in the high-capacity states. As will be discussed in the following chapter, intergovernmental equalization measures, insofar as they have been introduced at all, have been applied exclusively to federal support of specific services.

CONCLUSIONS

The federal political structure exerts an important influence on the fiscal organization of the United States. The existence of dual fiscal authority in the central and the state governments should not be ignored. The division of fiscal responsibility among the levels of government can be discussed in economic terms, although economic considerations are only one among many in actually determining this division. When it is recognized that the extent of collectivity involved in the provision of a public service varies from one service to another, a purely economic criterion for determining the appropriate level of collective organization is suggested. To some extent this criterion is helpful in explaining the existing division of responsibility, but political fact requires that traditionally organized collective units perform many functions for which, economically, they may not be "optimal" in any sense. The absence of any effective regional organizations for performing certain functions that involve externalities extending beyond state boundaries has led to federal action. State boundaries have, in many cases, little economic basis, although the existence of independent fiscal authority itself guarantees that states become separate economic entities for many purposes. Local

units can more readily be adjusted to conform to the suggested or implied scale of operation, but, here too, the traditional local organizational structure may cause serious lags to be present between the recognition of the need for some reorganization and the final reorganization itself.

One of the most difficult problems in intergovernmental relations is introduced in connection with certain public services which, while primarily concentrated in benefit to the local jurisdiction, exert significant spillover or external effects on a much wider area. To the extent that some national interest in the provision of state-local services exists at the current margins of performance, some argument is provided for federal government action. But the decision as to when this national interest becomes important or significant enough to justify federal action is an extremely difficult one and the added costs of centralizing decisions should not be overlooked. The provision of educational services by the state-local fiscal systems provides the most important current example.

The multiplicity of state and local units places certain limits on the fiscal organization of these units. The possibility of interstate and interarea migration of persons and resources tends to make the separate fiscal authorities steer clear of certain extreme institutional changes. The possible differences in state-local fiscal systems provide an important protection to the individual citizen. The possibility of migration provides him with an effective protection against undue fiscal exploitation on the part of a state or local unit of government. This possibility also allows the individual to exert a considerable freedom of choice in moving to where the fiscal "mix" is most closely in conformity with his desires.

The most serious problems of intergovernmental coordination arise because the separate subordinate units of government differ substantially in fiscal capacity. Differences in incomes and wealth among the separate units insure that the individual will be subjected to a fiscal disadvantage by residing in a low-income, low-wealth community. To a certain extent, this disadvantage is economic, and, insofar as this is true, it provides no basis for action. But to the extent that the differential in fiscal treatment among the separate states arises from the purely redistributive aspects of state-local fiscal systems, the over-all national income could be increased by some federal action aimed at equalizing the fiscal treatment in individuals in the separate states. This approach toward general or over-all equalization should be distinguished sharply from that aimed at equalizing the

performance of specific services in the separate states or local units. This form of equalization must be based on the existence of the spillover of benefits previously discussed.

SUPPLEMENTARY READING

The student who is interested in exploring further many of the interesting problems raised by the existence of a federal political structure should consult the following important recent papers upon which several aspects of the discussion of this chapter have been based:

Charles M. Tiebout, "A Pure Theory of Local Expenditures," *Journal of Political Economy*, LXIV (October, 1956), 416–24.

Charles M. Tiebout, "Theoretical Aspects of Fiscal Federalism," to be published in the forthcoming *Public Finances: Needs, Sources, and Utilization* (National Bureau of Economic Research).

George Stigler, "Tenable Range of Functions of Local Government," *Federal Expenditure Policy for Economic Growth and Stability* (Joint Economic Committee, 1957), pp. 213–19.

For a discussion of some of the problems raised by interarea differences in fiscal capacity, the student may consult my paper, "Federalism and Fiscal Equity," *American Economic Review*, XL (September, 1950), 583–99, reprinted in American Economic Association, *Readings in the Economics of Taxation* (Richard D. Irwin, Inc., 1959), pp. 93–109.

Chapter 36 FEDERAL-STATE FISCAL COORDINATION

Some of the more important fiscal and economic aspects of a multilevel political structure have been discussed in the preceding chapter. There remain to be considered the various institutional devices which may be introduced in an attempt to achieve the required fiscal coordination among the separate governmental units. Finally, from among the many possible devices, those which have actually been employed in the United States must be more carefully examined.

SEPARATION OF TAX SOURCES

The real cost of providing collective goods and services lies in the sacrifice of private goods and services that could have been enjoyed alternatively. Income represents generalized command over private goods and services, and wealth is always a capitalized value of an expected income flow. Therefore, as suggested before in this book, all tax revenues must come, ultimately, from individual income, current or anticipated. The various tax institutions are distinguishable only in that they involve different distributions of the over-all tax burden among individuals and in that they stimulate divergent psychological reactions and, because of this, exert important differences in behavioral responses.

If either efficiency or equity were the only relevant consideration to be taken into account in organizing the multilevel fiscal system, there would be a strong argument for levying all taxes at all levels directly on personal or individual incomes. If the fisc is conceived simply as the means through which the group of individual citizens may more efficiently purchase collective goods and services, the direct income tax would seem the best method of payment. This

tax is the one most closely analogous to the "price" that is paid for goods and services in the market economy. The individual who purchases a book, for example, uses generalized purchasing power, money income, in making his purchase; he does not use money that has already been earmarked for other specific purposes. Consistent application of the economic approach to collective activity would suggest that the income tax provide the only revenue source, whatever the level of government.

Similar conclusions follow if we look exclusively at the equity considerations. If the fisc is considered to be organized solely for the purpose of redistributing real incomes among individuals, the introduction of positive and negative direct income taxes is suggested as the most desirable method.

Efficiency and equity considerations are not, of course, the only considerations. Those remaining may outweigh these two in importance in many cases. If the fiscal system is designed to accomplish both efficiency and equity objectives simultaneously, real problems arise when too much reliance is placed on the individual income tax as the primary revenue source. If both the federal government and the state-local units should collect most of their tax revenues from the personal income tax, and if the state-local units should attempt any redistribution of real income through the fiscal process, there would be an incentive provided for individuals and resources to be shifted among the separate states in response to purely fiscal differentials, differentials which might not reflect genuine economic differences among states. This danger is recognized in practice; state governments do not attempt to raise more than a small part of total revenues through personal or corporate income taxes, and even when this tax source is used, the rates are kept rather low and only slightly progressive, if at all. Local governments are even more wary in their use of income taxation.

State governments collect slightly more than 10 per cent of all tax revenues from personal income taxes, and less than 7 per cent from taxes on corporate income. For local governments, the proportion of all revenue collected from income taxes approximates 1 per cent. These figures are sufficient to indicate that the income tax, either individual or corporate, is of limited productivity as a revenue source at the state-local level.

In a real sense, therefore, the fiscal system of the United States is organized fundamentally on the principle of separation of sources among the different levels of government. The federal government

relies primarily on the tax on individual and corporate incomes. The major instrument in the whole fiscal system for accomplishing real income distribution among individuals is the federal tax on personal incomes. This tax, which can be made as progressive in rate as social attitudes permit, can serve redistributive purposes sufficiently to allow the remaining fiscal institutions to be less directly oriented toward redistributive objectives.

The state governments rely for revenues primarily on the taxation of commodities, levied either on the production, sale, or consumption of a limited number or on substantially all commodities and services. Revenues from sales taxes, gross receipts taxes, and business license taxes make up more than 70 per cent of state tax collections. These taxes, imposed directly on the business firm engaged in the act of producing or selling a commodity or service, must be borne by individuals, either in their capacity as consumers of taxed commodities or as resource suppliers to the firms manufacturing or processing these commodities. Commodity taxation has the major advantage of allowing the separate states to collect large revenues at low nominal rates and relatively low costs of administration and collection. Taxes on sales, precisely because they are indirect taxes, do not generate the same psychological reaction as do income taxes. They are, to a certain extent, paid "painlessly," therefore, they do not exercise the same effects on the potential migration of men and materials as income taxes. The objections to state government reliance on sales taxation are the familiar ones. The taxes tend to be regressive when the actual tax burden is computed relative to an income base. But this objection is valid only if the objective of real income redistribution is admitted to be important at the state-local as well as at the federal government level. Even here, the combined effect of a state tax and expenditure system may, on balance, be redistributive even if the tax side, taken alone, is regressive. A second familiar objection is that commodity taxation involves an excess burden since it is levied on particular commodities. Individual choices are distorted, and this creates an unnecessary welfare issue. This objection is a valid one to any specific tax, taken alone, but its importance seems indeterminate.

Even more than the federal and state governments, local governments rely on a single tax source, in this case, the property tax, which makes up more than 85 per cent of local government tax revenues. As we have shown, property taxation, in an abstract sense, is equivalent to income taxation. But since real property tends to repre-

sent a relatively permanent form of capital investment, local units have found this tax productive as a revenue source. And one of the important reasons for continued reliance on this source is the past experience. The removal of the tax would create many windfall gains to current property owners, and these gains would be transmitted to other groups in society only after a reasonably long period.

The separation of tax sources among the separate levels of government in the United States is not, of course, complete. The federal government does collect large amounts of revenue from specific excise taxes on the sales of particular commodities or services. Many of the states impose individual and corporate income taxes, and some of them still collect revenues from the property tax. A few local governments levy taxes on gross incomes, and many local units try to tax specific commodities or services. But despite these overlaps in the institutional arrangements, broadly considered, the United States fiscal system can be said to be characterized by a distinct separation of tax sources. This separation has worked out reasonably well in past years, and it seems probable that the fiscal structure could be strengthened by some added recognition of the usefulness of this simplest coordinating device. The federal government should try, as soon as possible, to repeal all federal taxes on commodities other than those important sumptuary levies on liquor and tobacco and the special taxes on gasoline and automotive products. There seems to be little current justification for any federal taxation on the production, sale, or use of any other commodity or service.

By contrast, states should recognize the immense difficulty that will be faced in their attempts to levy individual or corporate income taxes. Those states that rely currently on state income taxes and which do not levy general taxes on sales should consider seriously the introduction of this major revenue source. Local governments should forgo where possible attempts to levy taxes on incomes and on sales and rely on property taxation.

COMMON TAX SOURCES—SUPPLEMENTS, CREDITS, AND SHARES

Insofar as tax sources are not separated for the different levels of government, common sources must be employed. The degree of coordination between the taxes imposed on a common source by the separate units of government ranges from complete independence at the one extreme to effective unification of fiscal structures at the other. The tax sources themselves are rarely so sharply defined that two

separate governmental units will actually impose levies on identical sources. For example, wholly independent action by the federal government and the states in taxing personal incomes would not likely result in precisely the same measure of income being employed in the several cases. In the United States, the taxation of personal and corporate income by the federal government and the state governments is perhaps the most important case where the separate units levy taxes on a roughly common source. In this particular case, the actual degree of coordination varies from state to state, but state income taxes are seldom, if ever, organized in complete isolation from the federal income tax. The coordination that is present is achieved, however, largely by the state fiscal systems being adjusted to the federal system. There is little explicit cooperation between the two levels of government in this respect.

States will normally define income for tax purposes in a manner roughly similar to that used by the federal government. Some states have allowed taxpayers to define income specifically as defined for federal tax purposes. In most cases, however, some differences will exist. Where similarity is present, this will assist the individual taxpayer in preparing his return for both units, and it will make the administration of a state income tax much simpler. Exemptions and deductions will also be allowed which are roughly similar to those allowed under the federal tax, although the quantitative size of these may differ widely.

Some coordination is implicitly achieved in commodity taxation. Federal authorities have deliberately refrained from entering the general sales taxation field despite persistent pressure to do so, especially in times of defense emergency. Federal taxes on particular commodities and services are admitted to be emergency levies despite their relatively long life as federal revenue sources. Conflict worthy of note here has arisen only in the case of highway-user taxation.

Tax Supplements

Deliberate coordination of separate governmental taxation of the same revenue source can take place through any one of several devices. One of these most frequently mentioned, but rarely used in the United States, consists of the utilization of the same administrative structure for both levels of government with each unit levying separate rates of tax. This may be illustrated by reference to a hypothetical state income tax supplement to the federal personal income tax. A single state could, conceivably, decide that it would be willing

to define income in precisely the same manner as the federal government and to allow precisely the same exemptions and deductions. On the basis of taxable income, as computed on the federal tax return, the state would then levy a simple *supplementary* rate. If the federal government's cooperation could be achieved, the state could utilize the federal collection procedure and the individual taxpayer could pay his federal and his state income tax while submitting the same return. If such full cooperation could not be secured, the state tax could be paid by filling out a duplicate of the federal income tax return for submission to state collection authorities.

This coordination device allows the individual states complete flexibility in adjusting rate structure but no flexibility at all as regards the definition of income, exemptions, and deductions. Administratively, there are major advantages in this proposal. But, politically, it has many drawbacks. It requires that the single state submit to the over-all structure of federal taxation, even to the extent of allowing the same loopholes.

One very simple way of accomplishing the same results as the tax supplement is that of imposing the state income tax, not as a percentage rate on income at all, but as a percentage rate of the total federal tax paid. This would effectively make the distribution of state tax payments among the people equivalent to that of federal tax payments. There might be much to be said for this proposal if the federal income tax itself could, in any sense, be considered as a reasonably perfect tax. But if there are imperfections in the federal tax, the utilization of precisely the same structure by the states would multiply the effects of the distortions generated by the imperfections in the federal tax. The state tax, if organized on a different basis, might be used to offset federal tax imperfections rather than to reinforce them.

Tax Deductibility

The individual taxpayer, in computing his taxable income for the purpose of determining his federal income tax liability, is allowed to deduct from adjusted gross income most payments of state-local taxes. This deductibility provision in the federal income tax is considered to be one means of securing some coordination between the federal tax and the state-local fiscal system, especially in relation to the states' attempt to impose personal income taxes.

The federal government, through this provision, makes the fiscal task of the state governments somewhat simpler. The deduction al-

lowance effectively shifts some portion of the state-local tax burden to the general federal taxpayer. For example, suppose that the state decides to levy an incremental tax of $100 on an individual who is paying a marginal rate of 40 per cent under the federal income tax and who has not fully exhausted his deductions. The state collects the full $100, but the individual's taxable income is also reduced by $100 for federal tax purposes. His federal income tax is reduced by $40. Thus, his combined tax liability is changed only by $60, although the state government collects an additional $100. The federal government's loss of $40 in the process must be made up by some supplementary taxation of all federal taxpayers or some reduction in the rate of federal expenditure.

There seems to be little justification for the deductibility of state-local taxes as a coordination device. Since a substantial part of state-local tax payments are allowed, the net effect is simply that of providing some federal encouragement to an expansion of state-local expenditures. The real costs of state-local services to local citizens is reduced, but the real costs to the whole national population is unchanged. The deductibility feature could be employed by the federal government to encourage states to utilize particular forms of taxes. For example, if only state-local income tax payments were allowed as deductions, this would provide a strong incentive for subordinate units to shift toward more reliance on income taxation as a revenue source. This approach would, however, tend to be less of a means of genuine coordination than of federal control of state-local fiscal systems.

Tax Credits

The tax credit is a device through which the central government may effectively coordinate from above the over-all fiscal system. Tax credits may be used to encourage the subordinate units to utilize specific revenue sources. The device can be best explained by reference to the federal estate tax, the only important fiscal institution which has incorporated the crediting feature.

More than with most other state taxes, differentials among the separate states in the taxation of transfers at death will tend to encourage certain groups of individuals to shift out of those states imposing the heavier rates and into those states imposing the more favorable rates. Interstate competition for the retired wealthy population led to the introduction in the early 1920's of the federal estate tax with the credit feature included. A federal tax was levied on the

value of all estates, but the payments of inheritance or estate taxes to states were allowed as credits against the federal tax liability. This feature effectively removed the differential advantage that a state might bestow on its wealthy residents, at least up to the point of the federal liability. If the state reduced its own tax below the size of the federal credit allowable, the individual would be liable for the federal tax payment anyway. This feature quickly led all states to impose inheritance and estate taxes that would at least fully exhaust the credit allowed against the federal tax. In the years since the introduction of this credit, both federal estate taxes and state taxes have been increased. The credit is not so important as it was at that time, although a few states still impose inheritance taxes only to the limit of the federal tax credit.

A joint federal-state committee recently recommended the introduction of an interim credit in the taxation of local telephone services. The federal tax would, under this proposal, have been retained for a limited period of time, but taxpayers would be allowed a credit against this federal tax if state taxes were enacted.

Suggestions have been made that a crediting feature be extended to the federal income tax. The individual would be taxed under the normal federal income tax, but, insofar as he paid state income taxes, his federal tax liability would be reduced correspondingly. Such a feature would insure that all states impose personal income taxes up to the limit of the federal credit allowed, and also that interstate differentials in income taxation would be reduced. But even to a greater extent than the tax supplement, this device involves what appears to be undue federal control over state independence of fiscal action. With the tax credit, not only would the federal government determine the type of state tax that would be allowed as a credit, but also it could effectively determine the extent of the state tax rates. The tax credit seems to be more appropriate to a politically unified system than to a genuine federal structure.

Tax Sharing

Tax sharing is a coordination device that has never been employed to a large degree in federal-state relations in the United States, but which is widely used in the relations between the state governments and the local units. The process of tax sharing involves the larger governmental unit administering and collecting the taxes and subsequently sharing the proceeds among the separate subordinate units on the basis of some prearranged formula. Tax sharing

is founded on the recognition that the most efficient tax-collecting unit may be, in many cases, considerably larger than the most efficient public-spending unit.

If all taxes were to be based on personal incomes, as pure efficiency and equity considerations might suggest, there would be some point in trying to have these collected by the federal government with the proceeds shared in some manner with the states. The fiscal independence of the state could hardly be preserved under such an arrangement, however, and, even if this were not significant, the working out of a generally accepted sharing formula would be extremely difficult. Experience at the state-local level has shown that the major problem of tax sharing lies in the determination of the criteria upon which the revenues shall be allocated among the subordinate units.

If the process is of purely administrative origin, the appropriate formula would seem to be one that returns to the lower-level units those revenues collected within those units. The tax would be collected by the higher-level governmental unit only because of its superior efficiency in collection. But the determination of just what share of revenues are collected from individuals in specific localities is a difficult task, which is doubly complicated when other purposes are combined with this in the actual administration of the tax.

Normally, with state-local systems, the tax is centrally collected, not purely for reason of administrative efficiency, but also because certain state aims are to be furthered in the sharing. Interarea equalization of fiscal capacity to finance certain specific services is a standard objective of sharing plans. Centrally collected revenues are shared on the basis of population, assessed value, school-age children, road mileage, geographic area, and many other criteria, depending on the specific tax to be shared.

UNCONDITIONAL OR BLOC GRANTS

The whole problem of securing fiscal coordination among the separate units in a multilevel political structure may be approached in two ways. The two preceding sections have discussed coordination devices that operate exclusively on the tax side of the fiscal account. A second approach is that of looking at the problem from the expenditure side. This approach recognizes that the governmental unit that collects taxes need not necessarily be the same unit that expends public funds. If the possibility of some intergovernmental transfer of funds is allowed, the problems of fiscal capacity can be effectively

solved through a system of grants among separate governmental units.

Why should funds collected at one level of government ever be transferred to lower-level units? And, to be somewhat more specific, should funds ever be transferred without any conditions attached to their spending? At this stage, two answers might be provided to these questions. If all of the subordinate units are roughly equivalent in general fiscal capacity, but the central government is considerably more efficient as a taxing agency, there might be some argument in support of a centralized tax system with unconditional or bloc grants to the subordinate units. This would be quite similar to the tax-sharing scheme discussed previously, the only difference being that the bloc grant method could apply to a whole collection of separate taxes considered as a group. The subordinate units would not, of course, under this plan possess fiscal independence on the tax side. But they would be allowed full freedom to organize their expenditures in accordance with local needs within the limits of the size of the bloc grants.

If the subordinate units differ substantially in fiscal capacity, there will be differences in the fiscal treatment of similarly situated citizens in the various units. This provides an additional, and different, argument for the central government to transfer funds through bloc grants among the separate units. Both equity and efficiency considerations may suggest that some central government attempt be made to equalize the treatment of individuals in the different subordinate units of government.

The primary advantage of unconditional or bloc grants lies in the degree of freedom that these grants allow the recipient units in allocating the funds among the several possible expenditures. If, for any reason, the central government is to collect revenues for transfer to lower-level units, a greater degree of fiscal autonomy is retained by these units through a system of bloc grants than through any other system of revenue transfers. Lower-level units retain complete independence in determining the choice among the several expenditure programs as well as the over-all level of expenditure to be carried out.

The unconditional or bloc grant has never been employed in the United States as a means of fiscal coordination between the federal government and the states. Given the political experience to date, it seems highly unlikely that this method of revenue transfer will be introduced in the foreseeable future. By contrast, both Canada and Australia have employed the bloc grant, and Great Britain has recently introduced the bloc grant as a means of transferring centrally collected revenues to local units.

As with any revenue transfer, one of the main difficulties that arises with bloc grants lies in the choice of a criterion or criteria for determining the separate shares. If the grant is aimed at equalizing fiscal capacities among the state or provincial units, some standard must be adopted with which capacity may be measured. The ideal might be to provide grants sufficient to allow each state or province to attain the same level of public services at the same tax pressure on local fiscal resources. But if the separate states are divergent in their over-all desires for public services, this ideal criterion is very difficult to define in operational terms.

CONDITIONAL GRANTS-IN-AID

The conditional grant-in-aid is the most widely used coordination device in the United States, especially between the federal and the state governments. In fiscal 1960 an estimated total of almost $7 billion was transferred from the federal government to state and local units in the form of grants-in-aid, including those grants made under the highway trust fund administration for the construction of the interstate highway system.

The rationale of the grant-in-aid is wholly different from that of the unconditional or bloc grant. The bloc grant may be aimed at equalizing over-all fiscal capacities among the lower-level units; it is not designed to encourage local units to shift expenditures to any particular pattern, or to guarantee that certain minimum service standards shall be provided by the lower-level governments. The conditional grant-in-aid is specifically aimed at encouraging the states to expand the supply of selected public services. The receipt of the funds is conditional on their being utilized in a designated fashion. Thus, the states receive grants, not for general purposes, but for use in highway construction, for vocational educational programs, for old-age assistance, and so on. State receipt implies an acceptance of federal government direction of expenditure. The degree of fiscal independence retained by the lower-level units in the federal hierarchy is substantially less than with bloc grants or with shared taxes.

This fiscal independence of the recipient units, the states in most cases, is still further reduced if *matching provisions* are included in the conditional grants, as they are in the majority of instances in the United States. With matching provisions, the federal government not only specifies to the recipient states the manner in which the funds shall be used but, in addition, in order for the recipient unit to qualify to receive the grant-in-aid it must match the federal share in

a specified proportion. This matching aspect leads states and local units to direct their own tax revenues toward those areas that will facilitate qualification for federal aid to the neglect of other public needs.

The conditional grant-in-aid, with or without matching provisions, can be looked upon as a means through which an interest in certain public service standards beyond the confines of the performing unit can be taken into account. Recall that, in Chapter 35, it was shown that the range of collective interest in many public functions (the example there was education) extends widely, but that this interest diminishes in magnitude as the area is expanded. Certain benefits from local government expenditure on schools, on highways, and on many other public services clearly extend beyond or spill over to citizens in other state units. For many of the state-local public functions, there is clearly some "national interest" in insuring that the service levels are at least up to some commonly accepted "standard." It may seem desirable to try to represent this genuine national interest through grants-in-aid while at the same time allowing the state-local units to maintain the major responsibility for actually performing the public services. The conditional grant-in-aid is well suited to accomplish this dual purpose. It can, by attaching conditions to the receipt of the funds, insure that state-local units will carry out public services up to desired service standards. At the same time, the actual administration of the public service may be kept at the state-local level.

FEDERAL GRANTS-IN-AID TO STATES AND LOCAL GOVERNMENTS

Transfers of revenue from the federal government to the states and the local units through the conditional grant-in-aid device constitute an important part of the fiscal system of the United States. Federal aid to subordinate units of government makes up almost 8 per cent of total federal government cash payments to the public at the present time. Viewed from the point of the recipient units, federal aid accounts for more than 10 per cent of total state-local revenues. It will be useful to examine these grant-in-aid programs more closely.

As suggested previously, these grant-in-aid programs are not designed to serve the purpose of equalizing over-all fiscal capacities among the separate state units. Funds are transferred instead to insure that certain standards of service are maintained by the separate states

and localities. Fiscal equalization enters only as a corollary to this primary function, and this to the extent that the poorer states require larger transfers in order to achieve accepted minimum service standards. On balance, the federal program of aid to state-local units does tend to reduce somewhat the fiscal disparities among the several states. But the extent of such equalization is not significant, and it appears to be more or less an unintentional result rather than an objective of the program.

Quantitatively speaking, the major share of federal financial aid to state-local units is concentrated in the areas of public welfare, highways, and education. For fiscal 1960, out of slightly more than $7 billion in total federal aid, more than $3 billion represented payments from the highway trust fund; an additional $3 billion represented payments for grants falling under the labor and welfare category of the federal budget, which includes grants for educational purposes. It would be grossly misleading, however, to suggest that the federal grant-in-aid programs are concentrated in a few broadly defined areas. There were 59 separate grant-in-aid programs in the regular federal budget for fiscal 1960; in addition there were 17 minor programs for revenue sharing, and 14 programs of loans and repayable advances. Finally, there was the major program of federal grants from the highway trust fund. Thus, a grand total of 91 programs for federal aid exist at the present time. Many of these are, of course, very small, but they represent, nevertheless, federal financial assistance along with federal direction of state-local fiscal activity. A brief and partial listing of some of the separate programs of grants-in-aid will perhaps convey some impression of the wide scope of activities included in the whole federal aid program:

Aid to state homes
School lunch and special milk programs
Public assistance
Hospital construction
Control of venereal diseases
Control of tuberculosis
National Heart Institute
Maternal and child welfare
Water pollution control
School construction
Vocational education
Grants for library services
Unemployment compensation administration
Watershed protection
Flood prevention
Agricultural experiment stations
Forest protection
Drainage of anthracite mines
Wildlife restoration
Disaster relief
Airport program
Slum clearance
Urban planning
Elimination of grade crossings

Table 36–1 groups the more important grant-in-aid programs under a few major categories. It will be helpful to discuss each of these broad functional categories briefly.

TABLE 36-1

Important Federal Grant-in-Aid Programs by Major Categories, Fiscal 1960
(In millions of dollars)

Functional Category	*Estimate for 1960*
Highways	$3,015
Public assistance	2,018
Agriculture	523
Education	330
Public health	279
Unemployment compensation administration	228
Housing	223
Airports	55
Resources	32
Civil defense and disaster relief	27

Source: *Special Analysis G, Budget of the United States Government for the Fiscal Year, 1960.* Separate data on federal grants-in-aid were omitted in the budget document for fiscal 1961.

Federal Aid for Highways

Over the decade of the 1960's, and perhaps beyond, federal grants-in-aid for highway construction will probably hold the number one position in any listing such as that shown in Table 36–1. This prominence of highway construction aid arises out of the legislation of 1956 in which the federal government embarked on a long-range program of construction of an interstate highway system. Prior to 1958, federal aid to the states for highway construction had never exceeded $1 billion per year.

The federal government has provided grants-in-aid for highway construction since 1916. But, prior to 1956, federal aid was distributed more widely over the whole road network, and the federal share in the costs was much smaller. For the most part, federal aid prior to 1956 was allotted to the states for road construction on the broadly conceived federal-aid system. State-local units were required to match federal funds received on a fifty-fifty basis during most of the period, although there were certain exceptions to this matching formula. The federal government's Bureau of Public Roads controlled the expenditure of aid funds only to the extent of participating in and approving of construction plans.

The 1956 legislation designated a specific 41,000 miles of highway in the country as the interstate system. For the modernization of this system, designed to meet traffic standards as anticipated for the 1970's, the federal government agreed to put up 90 per cent of the construction costs with the state-local units financing the remaining 10 per cent. Interstate roads are constructed to the design standards laid down in advance by the Bureau of Public Roads. It is the rapidly expanding program for these interstate highways that caused federal aid for highways to increase more than threefold between 1957 and 1960. Federal aid to state-local road construction other than the interstate system continues on a matching basis of 60-40.

For all practical purposes, the interstate highway network will be a federal system. The fact that the funds are nominally granted as aid to the states before expenditures are actually made does not remove the predominant federal participation in the program, both in the share of the costs and in the administrative supervision involved. The program was adopted on the basis of an argument that there was an overriding national interest in insuring that the nation have available a limited mileage of interstate roads constructed to accommodate interstate traffic.

The 1956 legislation changed the manner of administering federal highway grants-in-aid. Prior to 1956, these grants had been made from general expenditures, although the federal government did levy taxes on highway users. In 1956, a special highway trust fund was created outside the regular executive budget, and revenues from specific highway-user taxes were earmarked for this fund. Federal grants to states for highway construction have since come from this separate revenue account rather than from general expenditures.

Public Assistance Grants

Federal grants make up roughly half of total state-local expenditure for public assistance. This category includes federal grants for old-age assistance payments, for aid to the blind, for aid to dependent children, and so on. Grants falling in this category are designed to accomplish two purposes. First, the federal government tries to insure that certain minimum standards of public assistance are provided in all the states. Secondly, the grants are designed to include a substantial degree of equalization; the federal share of the total assistance payments is larger in the poorer states than in the richer states.

Public assistance payments are transfer payments, and, almost regardless of the manner in which the revenues are secured, substantial redistribution of real incomes is achieved through the taxing–assistance payments process. Given the fact that the separate states differ widely in fiscal capacity, the extent of real income redistribution accomplished through such programs could be expected to be quite divergent in the different states in the absence of a federal-aid program.

Federal Aid to Agriculture

Federal grants-in-aid to the state-local units for agricultural programs are a part of the over-all federal outlay on agriculture. In many cases, there is little distinction between a direct federal program and a program administered by the states and financed wholly, or in part, by the federal government. The separate items included in this grouping are quite heterogeneous. The federal aid to the states in providing free school lunches is one important item along with the program of disposing of surplus agricultural commodities to various state agencies. These programs are perhaps motivated less by the national interest in the declared objectives than by the need to dispose of surplus agricultural commodities that have been accumulated.

This category also includes federal grants to states for the support of agricultural extension work and agricultural experiment stations.

Education

Total federal grants of less than one-half billion dollars a year to state-local units for educational expenditures do not loom relatively as very important in the total educational outlay of almost $15 billion annually. Federal grants are made, however, in such a manner that specific aspects of the over-all educational structure is modified substantially by federal participation. The bulk of federal grants, to date, has been devoted to a few particular areas. First, federal government support has been important in aiding the state-local units to meet educational needs in federal-impact areas; that is, in communities where national defense establishments have placed new and expanded demands on local school facilities. Secondly, federal aid has always been important in the field of vocational education, and the existence of federal aid has caused perhaps an unwarranted expan-

sion in this type of education in the whole school structure of the United States.

As previously suggested, there has been persistent demand for a greatly expanded program of federal aid to the states for the purpose of educational expenditure for many years. It seems quite possible that major expansions of federal aid in this area may take place within the foreseeable future.

Public Health Grants

Many separate federal-aid programs are included in this category. The federal government provides a share in the construction of public and private hospitals, the control of various communicable diseases, medical research of various sorts, sewage disposal by cities, vaccination programs, and similar projects. Hospital construction grants make up the most important single item in this large group of separate grants.

Unemployment Compensation Administration

From the outset of the unemployment compensation program, the federal government has financed the full costs of administering the programs in the separate states. States impose unemployment compensation taxes, earmark these for state unemployment trust funds, and pay out compensation to eligible recipients.

Housing

Under the housing category are included several important, and highly sensitive, grant-in-aid programs. Federal grants for slum clearance and urban renewal, for urban planning, and for low-rent housing developments are included. The extent of the national interest in such expenditures seems to be more questionable than in many other of the programs wholly or partially supported by federal grants.

Remaining Grant-in-Aid Programs

Federal grants to state-local units, other than those included in the foregoing categories, do not loom as quantitatively important. As with those grants included under the housing category, however, many of the small grants now undertaken are politically sensitive, and additional federal programs may be undertaken. Pressures are always present for the federal government to expand aid programs in such areas as airport construction and forest protection. The possibility of

wholly new federal-aid programs being opened up must be recognized. As suggested, the dividing line between federal government and state-local government financial responsibility is never wholly clear. This being the case, the federal grant-in-aid becomes a popular compromise between those who want to expand federal participation and those who want to retain state fiscal independence. Few predictions can be made concerning the future development of any aspect of the fiscal structure, but the importance of the federal grant-in-aid program as a whole does not seem likely to diminish over the foreseeable future.

CONCLUSIONS

A clear separation of tax sources is the most simple means of securing coordination between the separate fiscal systems of the governmental units in a multilevel political structure. When it is recognized, however, that all taxes must ultimately be drawn from income this device may seem to offer much less than it promises. To a large extent, the United States fiscal system is organized on a separation-of-sources principle. This is due, in part, to administrative necessity rather than rational design. The federal government relies heavily on the income tax, the state governments on commodity taxation, and the local units on real property taxation. The separation is not complete, and some improvements could be made, notably by the federal government relinquishing certain indirect tax sources to the states. The principle of separation of sources seems important enough to prevent any federal government attempt to impose general excise taxation.

If common tax sources are used, as they are and must be to some extent, various devices are open to the governments through which some effective coordination may be accomplished. States utilize, to a considerable extent, federal rules and regulations in imposing income taxes. The more direct coordination through the use of tax supplements and tax credits are not widely used, and tax sharing is important only at the state-local as opposed to the federal-state level.

Unconditional or bloc grants, although they have often been proposed, have never been used in the United States. This method of securing fiscal coordination allows the central government to adjust interarea differences in fiscal capacity while allowing the subordinate units wide freedom of action in shaping their own expenditure structures. Federal aid to states in the United States has never been aimed directly at equaling fiscal capacities among the states; rather it has

en directed toward insuring that certain standards of particular blic services are carried out in the separate states. As a result of is approach, federal aid has taken the form of the conditional grant-aid. And federal grants have usually been accompanied by match-g conditions.

Many separate grant-in-aid programs now exist. The most im-rtant are those providing federal aid to highway construction and ose providing federal aid for state public assistance outlays. The er-all federal-aid program provides a means whereby those politi-l interests desiring greater fiscal and political centralization and ose desiring greater fiscal independence on the part of states may ach a compromise of sorts. For this reason, the federal-aid program ems likely to expand rather than to contract in the years ahead. The tent of genuine fiscal independence retained by the subordinate nits with major federal financial aid conditioned upon the perform-ce of certain functions is questionable.

UPPLEMENTARY READING

The student interested in pursuing further some of the issues raised this chapter is advised to read the careful survey by L. L. Ecker-Racz and M. Labovitz, "Practical Solutions to Finance Problems Created by the ulti-Level Political Structure," in *Public Finances: Needs, Sources, and ilization* (National Bureau of Economic Research, forthcoming).

For a more general discussion of some of the fiscal problems of federal-n see James A. Maxwell, *The Fiscal Impact of Federalism in the United ıtes* (Harvard University Press, 1946).

Part IX TAXES, UTILITY RATES, AND USER PRICES

Chapter 37 PUBLIC SUPPLY OF PRIVATE GOODS

Most of the activity of governments involves the provision of goods and services to the people, and normally these goods and services are *collective*. The benefits secured from the consumption of such goods and services are indivisible among the separate individuals and families in the appropriately determined group. It is the collective nature of these goods that makes public or governmental action necessary. If the benefits from consumption are wholly or primarily *private*, that is, divisible, the market organization normally can be trusted to supply goods in appropriate amounts. In general, consumer needs are more efficiently met by the market so long as goods and services are private rather than collective. As discussed in Chapter 3, the division of responsibility between the private and the public economy, between the market and the state, can best be discussed in terms of this distinction between private goods and collective goods.

There are exceptions to the general rule that private goods and services are supplied by the market mechanism, even in Western countries. Governments supply many goods and services which are private, in the sense here implied. There are many and varied reasons for governmental supply of these goods and services. A few of the more important ones will be discussed in this chapter.

PUBLIC SUPPLY AND INDIRECT TAXATION

Even where the market is able to supply goods and services efficiently, governments may assume the responsibility. In many such cases, the action of government may be prompted by a desire to use public sale as a means of raising revenues. Thus, instead of imposing indirect taxes on the production and sale of a commodity by private

firms, the government may take over the production and sale of the commodity directly. This will allow it to charge consumers with a "tax price" that may be in excess of a "cost price." In this way, governments secure revenues over and above the costs of production, and these revenues may be utilized for general governmental purposes. The results are very similar to those produced by indirect taxation of the sale of specific commodities. The main difference is that, through direct public operation, a monopolistic position may be more readily secured and exploited.

Examples of this practice are numerous. Certain European countries sell matches, salt, and tobacco only through government facilities. Several American states sell liquor through statewide monopoly systems. South and Central American republics may sell "risk" through lottery tickets, and use the excess revenue over premium payments for general purposes.

The principles that determine the setting of the "tax prices" for state-supplied commodities and services vary with the revenue needs of the jurisdiction and with the characteristics of the market for the particular product chosen. The important point to be noted about all such governmental action is that the public supply is motivated by the desire to raise general revenue and not by any specific feature of the goods and services involved.

THE PUBLIC UTILITY

The more important "private" goods and services directly supplied by governments fall in the industrial category roughly classified as "public utilities." Here public or governmental control arises because the market economy, organized on a competitive basis, cannot supply the goods and services efficiently due to specific physical characteristics of the production-distribution process. In technical economic language, production in the public utility industry is characterized by long-run decreasing costs or, in other words, by increasing returns to scale. This amounts to saying that the advantages arising from large-scale production processes extend over the output range to such a degree that maximum efficiency is achieved when only one or two units are present. A sufficient number of independent producing firms to insure effective competition could not operate at costs comparable with the single larger firm.

When an industry of this nature exists, three means of organizing production and distribution are possible. If no public action is taken, either a single privately organized firm or a few firms will

come to dominate the industry. The greater efficiency of concentrated production will enable the firm or firms to drive out actual and potential competitors until a monopoly position is secured. The opportunity to exploit the consumer of the product or service by charging prices above the costs of production will be present. In most democratic jurisdictions, public reaction to such private monopolies has been sufficient to rule out this method of organization over wide areas of the economy. A second, and alternative, method is that of organizing production and distribution in private large firms, but subjecting these firms to direct governmental regulation. The aim of such regulation is to prevent the firms from exploiting the consumers as a result of monopoly position. By and large, this method of public utility operation has been more important than any other in the United States. Railroads have been regulated by the Interstate Commerce Commission for three quarters of a century. Telephone and telegraph rates are regulated by the Federal Communications Commission; electric power and natural gas rates are regulated by the Federal Power Commission, and so forth. Within the separate states, regulatory agencies normally exercise some control over the purely intrastate operations of public utilities.

A third method of organizing the public utility industry is for the industry to be directly taken over and operated by the government. Many of the utilities mentioned, such as railroads, airlines, and telephone and telegraph companies, are governmentally operated in the European countries. In the United States, the direct operation method is used more sparingly, but public operation is widely employed even here. At the federal level, the most important public utility service that is directly supplied by government is that provided through the postal system. But at the local level, publicly operated utilities are quite common. These include municipally owned and operated electric power distribution systems, public water supply systems, sewage systems, garbage disposal systems, and many others of a similar nature. Reference to these particular examples does not imply that the genuinely economic argument for public utility regulation or control is present in each case. The public utility conception has never been wholly clear in public opinion, and governments may classify industries as public utilities in some cases when physical characteristics do not justify this.

All public utility industries supply goods and services that are essentially *private*. The benefits to be derived from consuming the goods are divisible among users, more or less completely. The private

nature of the goods is usually acknowledged in the financing itself. The costs are usually concentrated on the direct users, and these costs are allocated among the several users in proportion to consumption. This private nature of the goods and services should not be taken to suggest that there is no "public" or national interest in the industries involved. Clearly, there is some over-all national interest in insuring that an adequate postal system is provided. But the fact that this national interest is not considered sufficient to warrant major financing from general tax revenues as opposed to user charges makes the postal system, for purposes of this analysis, fall within the classification of an industry supplying *private* goods and services.

One major governmental function is that of providing the services of roads, streets, and highways. Traditionally, it has been considered appropriate to finance this function from the general tax revenues. The automotive revolution has changed this traditional view; the tremendous demand for additional highways has transformed this road function into a "public utility" in the sense here discussed. Benefits are clearly divisible, and public opinion now supports the imposition of the main costs of this function onto direct users. This highway function is so important that all of Chapter 38 will be devoted to some of the problems that it presents.

THE USER PRICE AND THE TAX

The distinguishing feature of governmental supply of a *private* good is its employment of a *user price* or *user charge* instead of a tax as a means of financing the good or service. Almost by definition, a genuinely collective good or service cannot be directly priced. The electric or water meter can directly measure the kilowatt hours or gallons used during a specified period of time. By contrast, think how difficult it would be to try to estimate the amount of a policeman's services used last month by a single family on the beat. In the first case, measurement, and, because of this, a direct user price related to consumption, is possible. In the second case, it is not.

In order for user prices to replace taxes as means of financing publicly supplied services, the measurement of individual shares in total usage of the service must be possible. But this in itself is not a sufficient condition to warrant the user price. This possible introduction of the direct-user price must be supplemented by either an equity or an efficiency reason or both. We may first discuss the equity basis for direct-user charges. If the benefits of publicly supplied services are enjoyed mainly by direct users, that is, if these benefits do not

spill over to other than direct users, there seems no reason why other than direct users should be called upon to pay the costs. The main beneficiaries of municipally supplied electricity are those who use the electricity, and these enjoy the benefits in relation to their consumption. Nonusers are relatively unconcerned; hence, commonly accepted ideas of simple justice dictate that municipally supplied power should be directly priced to users in relation to consumption. By contrast, publicly supplied services may exist for which full user pricing is not held desirable. Free school lunches are enjoyed directly by the children eating them. But the maintenance of adequate diets for children may have benefits for the whole population; these benefits may be sufficient to insure that children secure lunches "free," even though the direct benefits may be directly measured. The indirect benefits may outweigh the direct benefits in importance.

The user price may be made necessary for purely economic reasons in many cases, quite independently of equity considerations. For goods that provide measurable and divisible benefits to individuals, the government may find "free" provision impossible. Let us use the municipal supply of water as an example. The city could "give water away" to all residents without charge. The costs could be financed out of general tax revenues. In a real sense, the taxes paid constitute "prices." But since the individual resident will not be likely to connect the tax payment made with the water he receives, the "pricing" function will not be effectively performed by general taxes. In his usage of water, the resident would, in this case, be quite wasteful. He would use water up to the point at which the marginal return from additional usage is negligible. If the city, in turn, tries to accommodate all demands for water consumption on this basis, many more resources may have to be invested in water supply than really should be necessary. The user price, as with any price in the market economy, serves an essential function in rationing an available supply among the many possible demands. The introduction of the direct-user price for water, through the use of the water meter, causes the individual resident to make a more correct marginal decision each time that he uses additional water. Total consumption of water will be reduced, and resources more efficiently utilized.

An important principle of public finance may be stated at this point. Governments cannot efficiently "give away" goods and services for which the demand is relatively elastic over the relevant range between zero and some proximate cost price. Any attempt to provide such goods and services "free" and to finance the costs through gen-

eral taxes, will surely result in either one or both of two conditions. Either there will be a serious shortage or congestion, or relatively too many resources will be devoted to the supply. To take a more extreme example than that of water to illustrate this point, suppose that a city decides to finance all steak consumption through general taxes rather than to allow butcher shops and departments to operate in the private market. Individuals would consider steaks to be "free"; they would try to secure as many as possible. The result would be the immediate appearance of a serious "shortage." If the government tries to respond to this "shortage" by supplying more steaks, far too many resources will be drawn into this line of investment relative to its alternatives.

As another practical example, look at the postal system. If individuals were to be allowed to mail letters and parcels free of charge, this would obviously place undue demands on the postal facilities. If the government tried to build facilities to accommodate the "free" demand, far too many resources would be devoted to the postal system.

In many cases, there may be sound economic reasons for introducing a user price in order to ration more adequately the supply among users, even though the good or service may have important elements of a collective nature. A good example is provided by municipal parks and swimming pools. Once constructed, facilities such as these are available to all residents. In this sense, the facilities are genuinely collective. But the externality in consumption extends only to the point at which no overcrowding takes place. Once the population of users exceeds a certain number, additional usage may actually reduce the enjoyability of the facilities for all users. Here it may be necessary to introduce a user price solely for the purpose of rationing out the available space, not primarily as a financing device to cover the costs of the facility. Thus, the public beach may be financed out of tax revenues, but on summer Sunday afternoons a user price may be necessary to assist in reducing undesirable congestion. As the rapidly increasing urban population in the United States places more and more demands on limited recreational facilities of this nature, the introduction of direct-user pricing for goods that were formerly considered wholly collective may become quite a common phenomenon.

Several publicly supplied goods and services are always on the margin as regards the use of user prices or taxes as a means of financing. As suggested in the next chapter, road or highway services

have only recently been almost fully shifted over into the category of user pricing, even though the financing devices used are still called "taxes." One of the areas of emerging importance is higher education. Here the direct benefits are clearly divisible; there are also collective indirect benefits. But more and more support is now being given to the view that state governments should move somewhat more in the direction of pricing higher educational services directly through tuition charges. The state universities of the nation, over the next two decades, may find it necessary to resort to more direct pricing of their services.

THE DETERMINATION OF USER PRICE

Governmental units now employ direct-user pricing for the clearly defined public utility undertakings. Mail services are priced, municipal power systems meter electricity and charge users directly, water users pay directly, and so on. The next important question to be discussed is that of determining the principles that a governmental unit might employ in setting the user price. Although we are concerned here only with the direct governmental supply of goods and services, much of the discussion that follows is relevant to the general problem of public utility pricing, whether or not the utilities are operated directly by government.

The pricing criterion immediately suggested for publicly operated facilities is that of the competitive market. The public authority should price the services of a public enterprise at a level approximating that which would be established if the industry were competitively organized. Competitive prices are set by supply and demand forces jointly. Over a long period of time, these prices must be sufficient to cover full costs of production, including a normal return on invested capital. But these prices cannot remain much above this full-cost level for significant intervals. If so, the existence of abnormal profits would attract new investment. The analogy with the competitive industry suggests, therefore, that the public enterprise set prices for its products or services at full-cost levels except as modified for short intervals by differences in demand conditions.

This pricing criterion can be illustrated simply in Figure 37–1. The line D represents the demand curve for the product, and this is assumed to remain unchanged over time. For purposes of this initial analysis, we assume that there are neither economies nor diseconomies of large-scale production. The average cost of production is constant over the whole output range and is shown as OC. (In this configura-

tion, average cost equals marginal cost at all outputs.) Let us now assume that the public enterprise is constructed to the scale indicated by the output OE_0. If the price is set so as to just cover full cost, price will be OC. But this policy will result in a serious "shortage" of the publicly supplied product. At price OC, there will be E_0E_1 unsatisfied demanders. The existence of such unsatisfied demand may suggest to the government the desirability of expanding the enterprise, but no internally produced funds will be available for this purpose. The fully competitive market would, in a comparable situation, respond quickly. Price would rise to OP. Excess profits would be earned in the industry; investment would be drawn into the industry, and the industry scale of operation would increase. This analogy suggests that the public enterprise, when confronted with excess demand at full-cost pricing, should increase prices sufficiently to eliminate all excess demand. Excess revenues over costs provide a criterion for expanding the scale of the activity. As these "profits" are plowed back into the enterprise, the scale of operations, and output, is expanded. Price will have to be gradually reduced. In long-range equilibrium, the public enterprise would be constructed to the scale of output OE_1, and price should equal OC, average and marginal cost of production.

In the contrasting case, if the price that eliminates excess demand and excess supply, that is, the price that clears the market in the short run, should fall below the full-cost price, this is an indication that the enterprise is constructed to a scale exceeding that which is most desirable. Disinvestment and contraction should take place.

The extremely simplified illustration discussed here is useful in showing the pricing principles that may be appropriate for public enterprises that are characterized by roughly constant returns to scale *over the relevant output range.* Despite the fact that the existence of increasing returns to scale provide the basic reason for the public regulation or public operation of the utility industries, many of these industries may reach the point of constant returns to scale within their own output ranges. Increasing returns need only extend to a point sufficient to make competitive organization impossible; they need not extend over the whole possible range of output. For example, assume that the utility shown in Figure 37–1 should experience decreasing long-run average costs only over the range OE_0. In this case the average cost function would take on the configuration BGH. The pricing principles just discussed would not be altered. It is essential, therefore, that a clear and precise distinction be made between: (1) increasing returns to scale sufficient to warrant public regulation or

public operation, and (2) increasing returns to scale over the whole range of output relevant to a given market demand.

This important distinction has much practical relevance. While competitive organization seems out of the question for many public utility undertakings, many of them seem to be organized on a sufficiently large scale to take full advantage of all increasing returns. For example, a water distribution system for a reasonably large city seems large enough to exhaust all large-scale advantages. The same thing holds true for the nationalized postal system, the nationalized railway systems of the European countries, and many other publicly operated enterprises. For all such enterprises, the government should be guided in its pricing decisions by both demand and cost considerations. More importantly, the government can, in all such utilities, rely wholly on the *profitability* criterion for determining whether or not additional investment is needed. If the enterprise is profitable, that is, if it produces revenues over and above full costs, expansion in capacity is indicated. If the enterprise is unprofitable, contraction is indicated. Government need not resort to general tax revenues in the financing of enterprises of this nature; the financing can be wholly divorced from the ordinary fiscal system.

For enterprises of the second type, the pricing and investment problems are considerably more complicated. If the range of increasing returns to scale extends over the whole range of market demand, both the pricing and the investment criteria need to be re-examined. Again we may use a simple geometrical illustration as the basis for the discussion. (Refer to Figure 37–2.)

Increasing returns to scale extend over the whole range relevant to the market demand curve, *D*. The long-run average cost of production decreases continuously over this range; long-run average costs are shown by the curve *CC'*. Since long-run average cost is not constant over output, marginal cost is not equal to average cost. And, since average cost is falling, marginal cost must be less than average cost. The marginal cost curve is shown as *CM*.

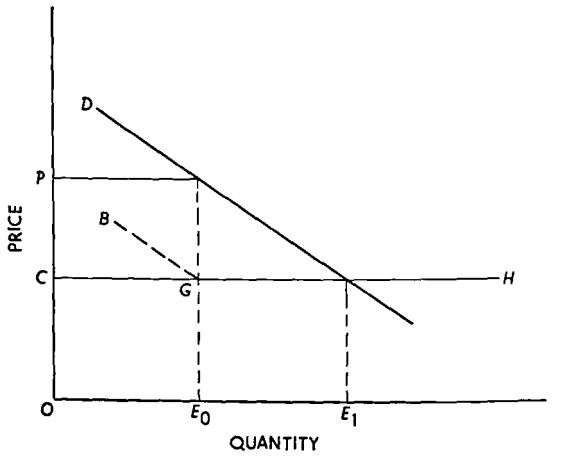
If the same criterion suggested for the constant returns case is adopted, the long-range equilibrium price should be OP_a, and the scale of operation should be that indicated by the output *OE*. At this point the price charged directly to users of the utility product or service is just equal to the full cost of production, and the enterprise, being constructed to the scale indicated, is making neither profits nor losses. Many students of the problems of public enterprise pricing accept this as the "optimum" pricing and investment structure, and

they make little distinction between this case and the one shown in Figure 37–1. Perhaps more importantly, most public utility and public enterprise regulation and control is based on an implicit acceptance of the profitability criterion.

The objection to this system of pricing, which we shall now call average-cost pricing, and to the profitability criterion for investment, has come mainly from economists who object to the inefficiency in resource usage that will be promoted. In the fully competitive economy, firms will be led by the profit motive to adjust their operations to the most efficient scale of operations. At this scale, average costs and marginal costs are equal, and price tends to be equal to both. But it is the equality of price with marginal cost of production that is normally employed as the criterion for "optimum" or "efficient" resource allocation. Marginal cost reflects the incremental or additional cost incurred in producing the marginal or last unit. Since resources must be drawn away from alternative employments, marginal cost accurately reflects the opportunities that are foregone. The equality between price and marginal cost insures that consumers are provided with the opportunity to compare items whose prices reflect genuine or real alternatives. If price exceeds marginal cost, as in the case of monopoly, the consumer is forced to pay more for a unit of a good than the real resources cost—more than the value of an alternative product—involved in its production.

FIGURE 37-1

Public Utility Pricing
Constant Returns



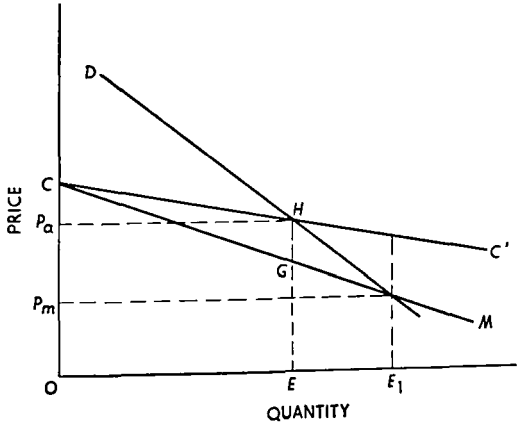
The objection to public enterprise pricing at average cost levels, OP_a in Figure 37–2, is that this will not be "efficient." Marginal cost lies below average cost in the increasing returns case, and if price is made to equal average cost, price must exceed marginal cost. In reference to Figure 37–2, at output OE, marginal cost is shown as EG, which is less than EH. This suggests that the value of resources, measured in terms of alternative production sacrificed, used up in producing the marginal units of the publicly supplied product is less than the price charged. The whole community could enjoy a larger real income if production by the public enterprise should be expanded.

The proposal advanced as a substitute for average-cost pricing is that of marginal-cost pricing. The public enterprise is advised to set prices at marginal-cost levels, and to adjust production in the long run to the point at which marginal cost equals demand price. The long-run equilibrium point is illustrated by the price OP_m and the output OE' in Figure 37–2. Here the marginal conditions required for "efficiency" in resource usage are fully met, or so it initially seems. The price charged to consumers is exactly equal to the value of the resources used up in production, this value being measured in terms of alternative product sacrificed.

There is, however, one major difficulty with this proposal as a substitute for average-cost pricing. If the enterprise is characterized

FIGURE 37-2

Public Utility Pricing
Increasing Returns



by long-run increasing returns to scale, marginal-cost pricing will not recover the full costs of operation. At output OE', the average cost per unit exceeds the marginal cost. The enterprise will continually run a deficit if marginal-cost pricing is relied on to produce revenues. This has led many students of the problem to suggest that the deficits be financed out of general tax revenues. This means of financing public enterprise deficits seems to be objectionable, however, because of the nature of the benefits. Direct users of the facility secure the bulk of the benefits. Why should some of the costs be placed on the general taxpayer merely because of the physical characteristics of the undertaking?

Various means have been suggested to escape from this dilemma. Users may be subjected to special lump-sum taxes not related to use. These lump-sum taxes apply only to direct users, but even here the payments, being unrelated to use, are not fully "equitable." Additional difficulties arise when an investment criterion is sought. If the enterprise is not "profitable" in the usual sense, that is, if prices do not produce sufficient revenues to cover all costs, how is the investment desirability of the project to be discovered? What criteria may be introduced to distinguish among those possible public enterprises which are not socially profitable at all, and those which are really profitable from a social point of view? These are only some of the questions that arise in any serious consideration of marginal-cost pricing for public enterprises.

Some of the points made here may be better explained by reference to a simple example. Suppose that a city sewage system is such that increasing returns to scale are present. The average cost of installing the system per resident is $500, but the incremental or marginal cost of tying in additional houses is only $400 per resident. If average-cost pricing is used, $500 will be the fee charged to all residents who want to hook onto the system. On the other hand, if marginal-cost pricing is adopted, this fee will be only $400. But if the fee is only $400, the full collections from all residents will not be sufficient to pay the costs of installation. At a $500 fee, some residents who would be willing to pay $400 will not be included, even though the added cost of hooking them onto the system is less than $500. This is clearly inefficient, but how is the inherent conflict between profitability as an investment criterion and optimal pricing to be resolved? At both the practical and the theoretical level the answers to this question are quite unsatisfactory. As suggested, most utility undertakings do follow average-cost pricing to a large extent. The multi-

part or differential pricing of many municipal electricity systems is one means of attempting to secure the results of marginal-cost pricing without sacrificing the profitability criterion for investment.

ORGANIZATION OF PUBLIC ENTERPRISE

Governments recognize that their functions in supplying what are essentially private goods should be separated from their more normal functions, especially as regards the fiscal account. Since the private goods are financed from revenues collected from user prices of one form or another, governments have normally found it advisable to set up separate categories for these user-price revenues. The organizational method usually takes the form of the "public enterprise" or the "public authority." A quasi-autonomous entity is created outside the regular budget account of the governmental unit, and this entity is provided with somewhat more autonomy as regards financial decisions than is the normal government department or agency. Public enterprises are, in other words, organized as business enterprises as far as possible.

There are, of course, exceptions to this quasi-independent method of organization. The United States Post Office is organized as a regularly constituted government department, although its budgeting procedures take into account the public enterprise aspects of its operations. State highway departments are normally organized, not as separate corporations, but as regular state departments. At the municipal level, orthodox fiscal organization of public enterprises is more rarely encountered, perhaps because of the more clearly defined "business" nature of most of the municipally operated utilities.

CONCLUSIONS

If the line is rigidly drawn, public finance as a subject field does not include consideration of the supply of private goods by public agencies or authorities. The "public" aspects of the economy arise out of the collective nature of certain goods and services that make governmental supply necessary. The tax is not a direct-user price, and the whole study of taxation and expenditure arises largely because of this fact.

Governments do supply private goods to individuals, however, and the dividing line between the use of the tax and the user price is not always predictable. Actually, governments supply private goods for several reasons, some of which are reasonable and some of which

are not. The most important of these reasons stems from the "public utility" nature of certain industries. These are industries that are not suitable for competitive or market organization because of the importance of large-scale production or increasing returns to scale. Governments normally will regulate private firms in these industries or they will directly operate the industries and supply the services.

The problems of determining the appropriate prices and the amount of investment in the public utility industries are difficult and complex. These problems have been only briefly considered, not because they are unimportant, but because further elaboration can more adequately be included in more specialized textbooks in economics or in "public utilities" as a special course in applied economics.

Chapter 38

HIGHWAY FINANCING AND OPERATION: A SPECIAL CASE

The provision of highways, roads, and streets is one of the most important functions performed by government in the United States. For state-local units, highway expenditures are second only to educational expenditures in quantitative importance. For all units combined, only national defense and education loom larger. In fiscal 1957, approximately $8 billion were spent on highway and street maintenance and construction. Expenditures in this classification continue to rise rapidly year by year, and these will probably exceed $10 billion annually early in the 1960's. Detailed discussion of both the expenditure for this important function and the taxation required to finance this expenditure has been postponed until this chapter because of the relatively unique nature of highway services in the modern American economy. An understanding of highway financing is impossible without some appreciation of the special position that the highway function now holds.

TRADITIONAL ATTITUDES TOWARD THE PUBLIC ROAD

The provision of road and street services has been considered to be an appropriate public or governmental function at least since the days of the Roman Empire. Roads have traditionally been conceived to be genuinely *collective* goods because a road, once constructed, appeared to be equally available to all potential users. So long as congestion did not become serious, the road usage of one person did not reduce the services that were available for others. Roads provided general access to property and provided a means for general communication among cities, towns, and villages. The "public" financing of the public roads out of revenues collected from generally imposed taxes seemed fully acceptable to the citizen of almost any governmental unit prior to World War I.

This traditional conception of the road or highway function was, of course, essentially correct, and the public road still retains certain genuinely collective characteristics. But the fact that the traditional conception no longer remains wholly accurate is one of the things that makes the whole set of current problems relating to the provision of highway services most difficult to resolve. Public opinion is extremely slow to realize that a conception which has been valid for centuries may no longer be fully acceptable as a basis for policy formation. The traditional view of the appropriateness of the "free" public road now seems to apply only to certain isolated rural road segments. The "free public road" is an anachronism in the automotive age.

THE IMPACT OF THE AUTOMOTIVE REVOLUTION

The change in the character of this traditional public function is the result of the automotive revolution that has occurred during the last half century, primarily since World War I. The United States has literally become a nation on wheels during this period. The magnitude of this change can best be shown by direct reference to the growth in the number of motor vehicles and in the number of vehicle miles traveled since 1920. Table 38–1 includes data on these two series for certain selected years.

TABLE 38-1

Registered Motor Vehicles and Vehicle Miles Traveled, Selected Years, 1921-60

Year	*Registered Motor Vehicles (In millions)*	*Vehicle Miles Traveled (In billions)*
1921	10	55
1925	20	122
1930	27	206
1935	26	229
1940	32	302
1945	31	250
1950	49	458
1957	66	643
1960	72 (est.)	700 (est.)

Source: *Automotive Facts and Figures.*

As the data indicate, the number of vehicles (cars, trucks, and busses) registered has increased sevenfold since World War I. Vehicle miles traveled on United States highways have increased even

more, by some fifteenfold over the same period. Ton-mileage has perhaps increased to an even greater extent.

This genuine revolution in the American transportation pattern within a relatively short period of time has decisively modified the traditional conception of the highway function of governments. The road or street no longer serves primarily as a means of providing access to property and as a means of general communication among localities. Highway services constitute a major input for the production and distribution of an important share of national real income. No longer can the provision of highway services be properly thought of as an ordinary governmental function akin to national defense, education, and fire protection.

THE HIGHWAY AS A PUBLIC UTILITY

The modern highway network can more appropriately be classified in the public utility category. This explains the location of this discussion in Part IX of this book. For several reasons, one of them being the traditional conception of the road function and the development of the public road, highways will continue to be operated directly by governmental units. Competitive or market organization of the highway industry appears to be neither feasible nor desirable, and public regulation of private highway utility firms appears almost equally implausible. But it is equally evident that certain specific individuals exist who secure the primary and direct benefits from having road and street services provided by the public authorities, and, further, it is clear that the individual usage of these services can be measured without difficulty. This suggests that some method of pricing these services directly may be employed. In most of its essential characteristics, therefore, the highway more closely resembles the public utility than the collective good.

Evolution of Highway-User Taxes

The "public utility" conception of the highway function has not been fully accepted. Nevertheless, the fiscal demands which the automotive revolution has placed, and continues to place, on hard-pressed governments has forced a *de facto* recognition of this modified view of the highway. Very early in this century, in 1901, motor vehicle registration fees were introduced by the state of New York. By 1905, twenty-five states were levying some registration fees, and, after 1910, states began to use these fees for the purpose of collecting revenues

from highway users. In 1919, Oregon became the first state to introduce the excise tax on gasoline, but by 1929, all states levied taxes on gasoline. More recently, third-structure taxes on gross receipts, ton-miles, axle-miles, and so on have been imposed on certain types of road users. These separate taxes will be discussed in some greater detail at a later point, but the thing to be noted here is that these taxes are essentially *user prices*. They represent an attempt on the part of the government concerned to impose differentially heavy taxes on the direct beneficiaries of the public services provided. They have long been recognized as benefit taxes. And, in one sense, public utility prices can always be classified as benefit taxes.

The imposition of excise taxation on gasoline and motor vehicles does not, in itself, suggest the acceptance of a public utility view of the highway function. As noted previously, governments often choose to levy specific excise taxes as a means of raising revenues for general purposes. Gasoline and motor vehicles could, conceivably, be in a position analogous to liquor and tobacco. Sumptuary aspects of consumption might generate a public acceptance of differentially heavy taxation. But the mere posing of this comparison suggests that highway-user taxes are wholly different in character from the sumptuary taxes. No one has heard an argument to the effect that liquor taxes are justified because of certain special benefits that the government provides to the drinking members of the population. By contrast, highway-user taxation has been almost universally justified on the basis of the benefit principle.

Growth of Earmarking

Even more important in this connection than the benefit basis of highway taxation has been the development of the "separateness" of highway tax revenues. During the early years of the automotive revolution, taxes on road users were justified on the benefit principle, but revenues were channeled into the general fund and highway expenditures were made from the general fund. State governments found that the highway-user taxes were especially productive, and a share of the revenues came to be diverted to nonhighway uses in many cases. This led to a demand that highway-user taxes be segregated and that the revenues be earmarked for expenditures only on road construction and maintenance. Provisions of this nature are now incorporated in many state fiscal systems.

The public utility nature of the highway function has been even more emphatically emphasized in recent federal legislation. In 1956,

when the basic legislation providing for the construction of the interstate highway system was enacted, the funds from federal highway-user taxes were earmarked directly for accumulation in a special highway trust fund set up outside the regular budget of the federal government, and all federal highway expenditures (grants to states) were limited to payments from this fund. For the first time, highway-user taxes and highway expenditures were removed from the general budget of the federal government.

HIGHWAY TAXES AS USER PRICES

A continuation of this development seems almost certain as the rapidly increasing vehicular traffic places more and more demands for highway facilities on governmental units. The needs of the direct users of the highway network, the motorists, will continue to overwhelm the general community needs for roads. The *collective* interest in highway services are inframarginal. For all practical purposes, highway services, at the current margins of decision, may be considered to be essentially *private*.

The full recognition of the private and divisible nature of highway services suggests that, for reasons of both equity and efficiency, user prices should be employed. As implied above, highway-user taxes can best be considered as user prices of a special type. It will be useful to discuss the separate highway-user taxes separately.

Gasoline Taxes

All states now impose excise taxes on the sale of gasoline and diesel fuel. Current (1960) rates of tax on gasoline range from a low of 3 cents per gallon in Missouri to a high of 7.5 cents in Oklahoma. The median rate for state gasoline taxation is 6 cents per gallon. In addition to these state taxes, the federal government levies a tax on gasoline sales. Currently (1960), this federal tax is 4 cents per gallon. Only a few of the local units of government impose taxes on gasoline.

Gasoline taxes are major revenue producers. State collections from this source amounted to slightly less than $3 billion in 1958, while federal collections exceeded $1.6 billion. These totals can be expected to increase substantially over the 1960's, for two reasons. Continued increase in road usage will increase collections even with stable rates. In addition, both states and the federal government will surely enact continued rate increases in order to finance mounting demands for improved highway facilities.

The gasoline tax closely resembles a direct-user price. The liability of the individual motorist varies directly with his usage of the highway network since his consumption of gasoline depends directly on the mileage traveled. The relationship between highway usage, and gasoline tax paid, is not, of course, perfect. But the gasoline tax is not too different from the price for water or electricity paid to the municipality or power company on the basis of metered services.

The deficiencies in gasoline taxes, when considered as user prices, lie in their failure to discriminate among users in accordance with either the efficiency of different vehicles in producing ton-miles or the usage of different segments of the road network. If all vehicles produced the same amount of ton-miles per gallon of gasoline, the gasoline tax would measure, more or less perfectly, the amount of road usage. But insofar as the ton-miles per gallon of fuel vary sharply among the separate vehicle classes, uniform gallonage rates of tax will tend to discriminate against the vehicles that are least efficient in using fuel. Those vehicles securing the greatest ton-mileage per gallon of fuel will tend to be differentially favored. They will be allowed to "purchase" road services at a lower price than other road users. This distinction is important in reference to the impact of the gasoline tax on the owners of private automobiles and on trucks. Large trucks can normally produce more ton-miles per gallon of gasoline or diesel fuel than the private car. If this is true, and if ton-miles are considered to be the best measure of actual road usage, then the uniform gallonage rate of the gasoline tax, taken independently, will tend to "price" highway services more cheaply to trucks than to automobiles.

The second deficiency with the gasoline tax, when considered as a user price, lies in its uniform applicability to all of the separate roads in a given highway network. If units of highway services could be supplied for the same average cost on each segment of road, this would present no problem. But it seems evident that different roads involve different costs. A uniform tax on gallons of fuel consumed over the whole highway network cannot effectively introduce such differentials.

Vehicle Registration Fee

The second major highway-user tax is the motor vehicle registration fee or tax. The federal government does not impose this tax, but the states collected almost $1.5 billion from this source in 1958.

Many more local units of government levy this user tax than the gasoline tax. The average state fee per vehicle amounted to almost $24 in 1955, and some moderate increases have been instituted since that time. The average fee for private automobiles was almost $13 per year in 1955, and the average fee for busses and trucks was almost $42 per year.

When considered as a user price, the motor vehicle registration fee can be demonstrated to provide a very useful complement to the gasoline tax. It does not, of course, measure directly the usage of the road network. Instead it imposes a fixed charge for the privilege of using the highway network. In this sense, it is very similar to the installation charge employed by many private utility companies as a part of the total price of the services rendered. The disadvantage of the motor vehicle tax lies in its failure to measure road usage directly; but when this tax is considered alongside the gasoline tax this objection disappears. The license or registration tax supplements the gasoline tax in that some of the deficiencies in gasoline taxation can be overcome to a large degree. The registration tax is almost ideally suited for discrimination along the separate classes of users. Those vehicles which are more efficient in using fuels to produce ton-miles can be placed in a higher category for the payment of license fees. The higher registration taxes that are placed on trucks and busses can be considered to reflect some recognition of this point by public authorities.

When congestion is considered to be a genuine cost, the motor vehicle registration fee can even more effectively be used to discriminate among vehicles in accordance with the congestion that they are likely to create. To this date, governments have very rarely considered the elimination of congestion to be one of the functions of highway "pricing." Consequently, the pattern of currently imposed user taxes does not reflect the differential congestion costs that different classes of vehicles create. However, as congestion becomes a more serious problem in the highly urbanized sections of the United States, it seems probable that increasing attention will be given to the prospect of using the possible differentiation in motor vehicle license fees as a means of charging higher road "prices" to those road users who tend to create congestion.

Third-Structure Taxes

Several of the states impose taxes on commercial usage of the highway system over and above the gasoline or motor fuels tax and

the registration taxes. These are called third-structure taxes. These taxes represent an attempt to impose upon commercial vehicles a total charge for highway usage more in keeping with the incremental costs that the public authority must incur in providing highway facilities adequate to accommodate heavy vehicular traffic. These taxes take several forms. One basis employed is ton-mileage; another is axle-mileage; still another is gross receipts of the transportation firms. Again it seems probable that more and more states will adopt these third-structure taxes in future years. The increasing usage of the highway network as a means of transporting freight coupled with the added congestion that heavy vehicles generate will probably tend to shift public attitudes toward an acceptance of third-structure taxes as an appropriate part of the whole set of highway-user charges.

Direct Pricing through Tolls

The direct-user price is employed for toll highways, tunnels, and bridges. Prior to the onset of federal discussion of the interstate highway system in 1954, the toll road was gaining increasing popularity in the United States, and many primary toll facilities were constructed in the decade between the end of World War II and 1955. To a large extent, federal financing of the interstate system has replaced the need for additional toll facilities, at least for an interim period.

The success of the great majority of the toll roads in securing revenues sufficient to service and amortize the original costs of the facilities indicates that direct pricing of highways is, in the proper circumstances, both feasible and desirable. The choice between the direct pricing of highways and the indirect pricing represented by highway-user taxation should be based largely on the costs of administration. It seems evident that for most interrelated roads and streets with frequent entry and egress points the charging of tolls would require an inordinately large outlay for administration. Collection booths would have to be located at numerous points on the roadway, serving both to restrict traffic movement and to require expensive maintenance. By contrast, however, the direct-pricing alternative is suggested for all limited access throughways. Where access to the road is reasonably limited, there seems no reason at all why the direct users should not be charged with the costs of the facility. Even for those roads with frequent entry and egress points, modern techniques of automation may make possible a much more efficient usage of the toll method than now appears to be economically feasible.

The choice between direct pricing through tolls and the indirect pricing that is represented by highway-user taxes can be illustrated with reference to the interstate highway system that is under construction. As suggested previously, the federal government finances 90 per cent of the costs of construction of this system of limited access roads, designed to connect the major population centers in the country. The principle of charging highway users directly with the full costs of the system was embodied in the original revenue legislation enacted in 1956. The federal share is financed through revenues collected from the federal highway-user taxes. In this way, highway users will pay for the interstate system. But a more efficient method of payment would seem to be that of removing the federal user taxes and replacing these with a system of tolls to be charged on the completed system. Since design standards require that all roads in the system be of limited access, there would be no administrative reason why tolls could not be established. Certainly the direct-pricing method would result in a more efficient usage. With indirect financing through user taxes, all motorists, whether or not they use interstate roads, will pay for the system. With the direct method of pricing, only those motorists who use the new facilities would be charged. The fact that the toll method of financing was never seriously proposed for the interstate highway system suggests that the traditional conception of the "free" public road has not been fully replaced by the public utility conception, although public opinion is willing to accept a *de facto* recognition of this more appropriate view through the levy of user taxes.

CRITERIA FOR HIGHWAY INVESTMENT AND EXPENDITURE

Highway expenditures account for something on the order of 2 per cent of gross national product. The absolute amount of highway spending will certainly increase over the next two decades; the proportionate amount probably will also rise. Is this the correct amount of spending on highways, roads, and streets? Should more be spent for this important function? Or are the states and the federal government currently spending too large a share of the nation's scarce economic resources in creating an ever-expanding network of concrete and asphalt? What criteria may be introduced to assist governmental units in making decisions such as these?

For genuinely collective goods and services, the only available criteria must be found in some general evaluation of the comparative

costs and benefits of the goods in question, an evaluation that can be made only by individuals acting in their various capacities as decision makers in a collective sense. The employment of direct taxes on users of highways suggests that some variant of the public utility approach to expenditure and investment is more appropriate in this case. The problem of determining the proper or socially desirable amount of expenditure on the provision of highways should, therefore, be somewhat more amenable to quantitative methods of analysis than that of determining the proper amount of a genuinely collective good or service.

Insofar as user taxes are specifically tied to the direct benefits from highway consumption, some version of the profitability criterion seems to be indicated. The simplest rule would be one which limits highway expenditure to revenues collected from earmarked taxes. If these revenues prove more than sufficient to maintain an existing road network and to amortize the debt that may have been issued at the time of construction, a surplus will be generated which can be plowed back into new construction, improvement, and expansion of the system. If revenues are just sufficient to cover full maintenance and amortization charges, this indicates that neither expansion nor contraction of the highway network is needed. Finally, if revenues are not large enough to cover the necessary maintenance and amortization charges, the highway system should be reduced in scale.

As suggested in the discussion of investment criteria in Chapter 37, this simple profitability rule works well only if certain conditions are present. The most important of these is that user prices must be set in a manner analogous to the competitive market price. The price charged to users of the facility must be sufficiently high to eliminate all excess demand if the facility is too small, and sufficiently low to eliminate all excess supply if the facility is too large. If expansion of the system is to be internally financed without debt issue, the user price must exceed the long-run average cost of supplying the services. If user price is set equal to long-run average cost (refer to *OC* in Figure 37–1), excess demand will exist if the facility is too small, but no excess revenues will be accumulated for internal investment in expansion. Instead of "profits" being accumulated, a "shortage" of services will occur; unsatisfied demanders will be present.

The highway investment problem is made especially difficult for several reasons. In the first place, although user taxes do represent genuine user prices to a large extent, governments have never seen fit to set these taxes in accordance with accepted public utility pricing

principles. At best, user taxes tend to be established at average-cost levels regardless of the scale of operation to which the highway network has been constructed. Since it seems almost certain that this network has remained too small during most of the period of the last forty years, revenues from user taxes have not been sufficient to finance internally the expansion that has been needed.

One aspect of the difficulty arises from the peculiar nature of highway services. When roads are "underpriced," no "shortage" appears in the sense that would occur if water or electricity were underpriced. Roads do not "run out"; they are not "used up" in consumption. Instead, the quality of services enjoyed by each road user is diminished if the point is reached where excess demand is present. There are external diseconomies in road usage beyond a certain point, and these take the form of congestion, the characteristic phenomenon of modern urban America.

If, in fact, highway services are "underpriced," an increase in the general level of user taxes can accomplish two results at the same time. First, and most importantly, the increases can provide a source for accumulating funds with which road system expansion can be financed without resort to debt issue. Secondly, the increases, through the rationing inherent in any price structure, can reduce somewhat the usage of the existing highway network; congestion can to some extent be relieved during the period of highway expansion that the elimination of congestion itself finances. A rudimentary examination of the highway system in the United States suggests that a general increase in highway-user prices would be desirable for both of these reasons.

If highway-user taxes are not increased, there are two alternative prospects. The first is simply that the congestion itself will establish some sort of equilibrium. Motorists will pay a major share of the costs of highway usage in the form of congestion. It should be emphasized that congestion costs involve an investment of economic resources just as much as does the construction of a highway network.

The second prospect is that projected traffic at current levels of user taxes be estimated along with the revenues that existing taxes will produce. If these future revenues can be accurately estimated, then a policy of debt financing for the required expansion in the road network may be undertaken. As shown in Chapter 27, the issue of public debt is justified where the benefits from investment are expected to accrue over long periods of time. A needed short-run construction program can be facilitated by resort to careful debt

financing. A major difficulty with this approach lies in the fact that better highway facilities will themselves generate more traffic. Therefore, the issue of debt instruments to finance a planned once-and-for-all expansion in a highway network may not really resolve the dilemma. When the network is constructed, revenues produced may all be required to service the debt issue. No excess funds will be available to construct an expansion of service that the unanticipated demands on the network have created.

In the postwar period, states have followed all three routes toward solving the "highway problem." First of all, it is evident to all motorists that congestion has been allowed to develop. Secondly, highway-user tax rates have been generally increased, and there seems to be no likelihood that these increases will cease in the near future. Highway construction costs have gone up rapidly so that some increases in tax rates would have been required even to maintain existing networks. Finally, states have issued bonds to finance road expansion. The federal government, in its important highway legislation of 1956, chose to finance its predominant share of the construction costs of the interstate highway system through increases in user taxes. After a heated and lengthy discussion and debate, those who advocated a pay-as-we-go federal program carried the day. The opposing group who had proposed an issue of special federal highway bonds to finance the major part of the outlay on the interstate system were defeated. As the program progresses, however, the federal government may resort to bond issue to finance the system because of a continuing reluctance to increase highway-user taxes.

LOCATION OF RESPONSIBILITY FOR HIGHWAY FINANCING

The provision of highway services has traditionally been a responsibility of state and local units of government. As the automotive revolution has required more and more investment in roads, the states have gradually assumed the primary fiscal responsibility at this level. The federal government has, however, expressed an interest in highway services, and, since 1916, when the first federal-aid legislation was enacted, some federal support has been provided to the states through a system of matching grants-in-aid.

Under the federal grant-in-aid program prior to 1956, the states retained the major share of financial responsibility for the highway network. Federal aid was limited in amount and was specifically applicable only to the construction of road segments designated as

federal-aid highways. Funds were divided among the several states in accordance with specific allocation formulas, and matching state efforts were required for state eligibility to receive these funds. The federal highway authority, the Bureau of Public Roads, exercised some supervisory control over the design standards and the location of federal-aid projects, but this control was indirectly administered through the requirement of prior approval of all projects. Before 1954, federal funds were made available to states on a 50 per cent matching basis; states were required to put up one dollar for each federal-aid dollar received for highway construction. In 1954, the federal share was increased to 60 per cent.

Federal grants-in-aid to the states for highway construction did not exceed one-half billion dollars annually before 1954. Table 38–2 indicates the magnitude of federal aid granted to the states in selected years since 1916.

TABLE 38-2

Federal-Aid Authorizations Administered by the Bureau of Public Roads Selected Years, 1916-70

Year	*Regular Federal Aid (In millions)*	Year	*Regular Federal Aid (In millions)*
1917	$ 5	1955	$ 875
1922	75	1956	875
1927	75	1957	2,000
1932	245	1958	2,550
1937	125	1959	3,075*
1942	137	1960	3,400*
1947	500	1963	2,200†
1952	500	1966	2,200†
1954	575	1969	1,025†

Sources: U.S. Bureau of Public Roads, *Highway Statistics*, and U.S. Congress, *Laws Relating to Federal Aid in Construction of Roads* (Washington, D.C.: U.S. Government Printing Office, 1958).

*Projected.

†Includes projected aid expenditures for interstate system only.

The whole basis of federal participation in highway construction was changed with the revenue and aid legislation of 1956. During World War II, there was some initial discussion of a specially designated network of interstate highways, and some preliminary plans were made toward setting up a national mapping of such roads. This discussion was revived and carried forward in 1954, and the revenue legislation of 1956 is the result. The argument for expanded federal participation was based on the presumed overriding national interest

in a limited system of interstate roads linking the major population centers of the country. National defense aspects were not omitted from the discussion of the proposals. When the issue was put before the Congress in 1955, there was relatively little debate concerning the relative roles of the federal government and the states. Here, as in many other instances in American experience, the states proved willing to accept greater federal control in exchange for greater federal aid.

The 1956 legislation established the interstate highway system. This network of roads, 41,000 miles, was originally supposed to be constructed by 1970, and design standards were supposed to allow this network to accommodate traffic projected through 1975. It was clear that if such a major construction program were to be carried through, supplemental financing over and above that available in 1956 was required. The most significant debate concerning the enactment of the 1956 legislation was whether the construction program should be financed from an issue of specially designated federal highway bonds or whether federal user taxes were to be raised sufficiently to finance the construction program on a pay-as-we-ride basis. The latter, and more conservative, financial position won this debate, and the program was approved only after revenue legislation was passed. The federal excise tax on gasoline was increased from 1½ to 3 cents per gallon, federal excise levies were imposed on tires and tread rubber, and a new federal tax levied on gross weight of heavy vehicles was introduced. Revenues from these taxes, along with some share of the revenues from the federal excise taxes on vehicles, was specifically earmarked for the highway trust fund. As mentioned in an earlier chapter, some acceleration of expenditures from the highway trust fund was authorized by Congress in response to the recession of 1958. This acceleration had the effect of threatening either the solvency of the fund or the continuation of the program. As a result, the federal tax on gasoline was increased to 4 cents a gallon in 1959.

Grants to the separate states from this trust fund were authorized for expenditure on construction of this interstate system, with the shares of the different states being determined by the mileage and design standards of the interstate segments included within their borders. The federal share of construction costs was set at 90 per cent and the state share at 10 per cent. All roads of this system are required to be limited access roads, constructed in accordance with relatively rigid design standards as determined by the U.S. Bureau

of Public Roads. The program of expanded federal participation in the construction of the interstate system was, somewhat naïvely, conceived as a short-run, extraordinary program that could be tapered off once the system's initial construction was completed. (Note the estimated figure for 1969 in Table 38–2.) A more realistic appraisal suggests that the traffic generated by the system itself will make its design standards obsolete prior to the completion date and that this, in addition to rapidly rising costs, will make a rather continual increase in federal financial support necessary.

Federal grants to the states in support of the remaining federal-aid roads have continued to be made since the passage of the 1956 legislation. A continuation of this earlier program seems somewhat questionable, although political pressures on the Congress are almost certain to insure this. The basic argument for federal participation in the financial responsibility for the highway network must rest on some national interest in maintaining an interstate system of roads. The designation of the interstate system as separate and apart from the more complex network of local highways seems to be a desirable change. But federal-aid funds should largely be limited to this system. There seems to be little basis to the contention that some important national interest exists in remaining state and local roads.

THE SOCIAL COST OF CONGESTION

The so-called "highway problem" in the United States, the problem created by the automotive revolution, has almost universally been considered to be one that could be solved only by the construction of a highway network sufficient to accommodate the traffic. As suggested earlier, there seems little doubt but that the existing scale of the over-all highway facilities in most sections of the country is below what might be objectively classified as "optimal" or "efficient." But the construction-to-meet-needs approach tends to overlook an equally important, but wholly different, aspect of the highway problem. It may be impossible, within the limits of any reasonable investment, to build roads, streets, and highways sufficient to accommodate all traffic that desires to travel even at "user prices" adequate to cover construction costs. For roads themselves generate traffic, or, in economic terms, roads make the productivity of private investment in motor vehicle travel greater. A continued attempt to build roads sufficient to accommodate traffic is one application of the "needs" or "requirements" approach to budgeting discussed in Chapter 18.

An alternative approach recognizes that traffic congestion is itself a cost, one of the major costs of modern urban life, and also recognizes that there are other ways of meeting this problem than simply building more expressways, freeways, and limited access highways. This approach aims directly at limiting the amount of traffic rather than expanding the road facility. The limitation-of-traffic approach seems to offer somewhat better prospects for a favorable solution in some of the major metropolitan areas of the country.

The traffic limitation approach to the highway problem includes many alternative means of accomplishing the removal of congestion desired. The simplest, and the most consistent with freedom of choice, is that of raising user taxes sufficiently to insure that traffic is limited. The license or registration fee is especially adaptable to use as a means of directly limiting traffic flow. The overcrowded metropolis should clearly introduce much higher motor vehicle license fees to encourage more limited ownership and operation of motor vehicles. And greater discrimination among the separate classes of vehicles could allow special taxation on those motorists who use the more congested road segments during the more crowded time periods. A somewhat expanded use of tolls could be introduced, and tolls could be made variable with congestion. The possibilities for imaginative use of tolls and indirect pricing through user taxes seem almost unlimited.

A more direct attempt might be made to limit traffic by governmental regulations forbidding or restricting road usage to certain vehicles at certain periods of time. Many cities now designate truck routes and force heavy vehicles to use these limited streets. Other cities prohibit heavy traffic during certain hours. Again this nature of regulation offers many prospects for imaginative authorities once the idea of traffic limitation is accepted.

The major metropolitan centers of the country will more or less be forced into the traffic limitation approach if they have not already been forced into it. The prospects for building downtown expressways and freeways sufficient to accommodate all of the vehicular traffic that would desire to use them, even at the cost price of construction, seem limited if anything resembling the traditional pattern of the central city is to be retained. The only alternative to traffic limitation for the major metropolis is a sprawling network of freeways and expressways with the absence of any major central concentration.

Many more points could be made in connection with traffic congestion and urban planning, but these are problems neither of public finance, strictly speaking, nor of public utility operation. This textbook is not, therefore, the appropriate place for expanded discussion. However, the national highway problem, which is conceived as one of public financing, cannot be adequately appreciated without some recognition of the traffic limitation alternative to road and street construction, especially as this problem is represented in the major metropolitan centers.

CONCLUSIONS

Highway financing occupies a special place in the subject field of public finance. While some elements of a collective good still characterize the modern highway facility, the automotive revolution has sharply changed the traditional conception. The highway can best be conceived as a public utility, although it is one that must always be directly operated by government. This public utility approach to the highway function has been generally recognized through the widespread adoption of highway-user taxes, although it has not been explicitly accepted.

Highway-user taxes are similar to user prices, and they may best be analyzed in this way. The gasoline tax measures road usage quite closely, although it cannot adequately discriminate among the vehicles of different efficiency in fuel consumption. The license fee provides a suitable complement to the gasoline tax in that it can more effectively introduce the desired discrimination among the separate classes of highway users. Third-structure taxes are used only to a limited extent, and these represent attempts by the states to introduce differentials in taxes that more accurately reflect incremental costs of providing the highway facilities.

Tolls, or direct-user prices, are employed on some major arteries, and the toll road movement was gaining ground quite rapidly prior to the interstate system program of construction authorized in 1956. The use of tolls is restricted to limited access highways because of collection costs. But the use of tolls on all limited access facilities seems economically desirable. Tolls would seem to be applicable to the interstate system roads, but this method was not adopted for this system.

To a limited extent, the profitability criterion may be applied in helping governmental units determine the amount of highway ex-

es desired. Since highway-user taxes have never been ration-
on the basis of public utility pricing principles, however, the
lity criterion is not so helpful as it might be. An increase in
l of user taxes can serve two functions simultaneously: a
f revenues for expanded construction would be provided and,
ited degree, traffic would be reduced.
federal role in assuming financial responsibility for highway
tion was greatly expanded with the authorization of the
system in 1956. The construction outlays on this system
ably continue to be very great for the next two decades.
utions to the "highway problem" have been sought almost
ely through the expansion of roads to meet current and ex-
affic demands. While the scale of the highway network has
been too small in most areas of the country, a continued
on this single approach to the "highway problem" does not
cient for many governments in metropolitan areas. Here a
mitation approach may prove a more effective one. Large
enters may be forced to "solve" the congestion problem by
traffic, directly or indirectly, rather than building more ex-
ys to accommodate vehicles.

MENTARY READING

a general discussion which embodies the "public utility" approach
hway function, the student should real my paper, "The Pricing of
Services," *National Tax Journal*, V (June, 1952), 97-106. The stu-
ld also consult O. H. Brownlee and Walter Heller, "Highway Devel-
nd Financing," *American Economic Review*, XLVI (May, 1956),

Part X CONCLUSION

Chapter 39 CONDITIONAL PROSPECTS AND PROJECTIONS

The purpose of this textbook is to provide the student with an introduction to "the public finances," the fiscal system of the United States at all levels of government. If this purpose has been accomplished, any attempt to summarize the book at this stage would be both impossible and unnecessary. The set of legally constituted institutions that the term "fiscal system" calls to mind is pervasive in its impact, complex in its operations, and essential to the maintenance of American society.

As suggested in the preface, the study of the public finances falls directly along the line of division between economics and politics as these two disciplines have been traditionally defined. The study of a fiscal system is a study of *public economy*. But decisions that are made regarding this public economy are *collective* decisions, reached through the political rather than the market process. Any understanding of the fiscal institutions as they exist at any point in time must rest on some appreciation of the forces involved in the decision-making processes of a democratically organized society. The economists' traditional criteria for efficiency are applicable in somewhat different ways, when indeed these are applicable at all.

Recognizing this, I have made little attempt in this book to develop clear and precise norms for the organization of a fiscal system. Nor have existing institutions been held up to ridicule and criticism because they fail to meet implicitly assumed, but highly questionable, criteria that have been traditionally accepted by fiscal theorists. The welfare aspects of public finance belong to a more advanced level of discourse than that which has been essayed here.

The approach taken has, to a large extent, been positive. By this I mean that I have attempted, first of all, to provide a basic description of existing institutions and, secondly, to make predictions

about the effects of these independently of value judgments. This is not to deny the intrusion of personal value judgments; of course these cannot be kept wholly out of any discussion. But no effort has been made to impose value statements merely because of the opportunities that have presented themselves.

Having taken what is essentially a positive as contrasted with a normative approach to the existing fiscal structure, I am not able, at this point in the book, to change character and list those fiscal reforms which should or should not be introduced. The positive approach suggests instead that this concluding chapter should incorporate some predictions about the probable changes that will be made in the fiscal structure during the forthcoming years. Care should be taken to warn readers that such predictions must be almost wholly speculative. Changes in fiscal institutions, in the public finances, are made through the political process, and this is composite of individual choices. It may prove possible, nevertheless, to ascertain a few broad outlines of possible developments.

The first point to be noted is that both the principles upon which they are partially based and the existing fiscal institutions themselves grew out of an era when the scope of the public sector of the economy was considerably more limited, both relatively and absolutely, than that we have experienced during the postwar years. The stability of existing institutions has not been adequately tested in the fifteen years since the close of World War II. This point is perhaps most clearly illustrated by reference to the development of the federal tax on personal or individual incomes.

Fiscal theorists have long supported the view that personal income is the appropriate base for a major share of the tax burden, and the predominance of this revenue source in the federal fiscal structure must be attributed, in part at least, to these ideas. But it seems quite possible that the relative desirability of the personal income tax in the fiscal structure may vary indirectly with the size of the total budget. In a period when not more than 10 or 15 per cent of the national product was directed through the fiscal system, the efficiency of the tax on personal income may have been greater than it is when almost one third of the national product is destined for collective purposes. One of the ever-present complaints about the fiscal structure during the postwar years has been to the effect that the tax base is gradually being eroded through the multiplication of deductions and exemptions. In the discussion of tax reform which took place in 1959 and early 1960, the need to broaden the income tax

base seemed to be widely acknowledged. However, strong political support can be generated for almost every particular exemption, deduction, and "loophole." At the high level of rates required to support the national budget, individuals and groups find it advantageous to invest considerable sums of money in tax evasion and avoidance, including investment in political agitation for special tax treatment. A continuation of rates at currently high levels may gradually erode the tax base to the extent that some changes will become necessary. Special exemptions and deductions may become sufficiently widespread as to make the whole tax seem inequitable and unfair. The emergence of this attitude, along with continued high rates, may act to reduce the morality of the American taxpayer. The textbook to be written a decade hence may appropriately require chapters on both "pressure groups" and "fiscal fraud," the latter being a subject which has long been familiar to French and Italian scholars.

A second shift of emphasis seems to indicate a modification in the ranking of the objectives of the fiscal structure. The Cold War and its corollary, the competition between the United States and the Soviet Union in terms of some measured rate of economic growth, has caused economic growth to be placed high in the listing of specific objectives for national policy. This has led to an awakened interest in the effects of fiscal institutions on incentives to work, to invest, and to save. As a result, changes may be predicted which will, in effect, tone down the redistributive objectives of the system in exchange for furtherance of the growth objective.

The pattern of federal expenditures will, of course, continue to be dominated by defense outlay. Only a substantial change in the international atmosphere could allow any reduction in defense outlays over the decade of the 1960's, and the more probable result seems to be ever-increasing expenditures made necessary by the increasingly complex weapons technology. Nondefense expenditures seem almost wholly unpredictable, except for the fact that certain programs exist and will be continued. The introduction of new spending programs will depend upon the strength of conflicting political pressures for expanded federal projects and for reduced federal taxes. As the economy grows, existing rates of tax will, of course, generate increasing revenues, and some collective decisions will need to be made between tax reductions and further expansions in federal spending programs. If the future may be predicted from the past, there seems to be a strong bias in favor of the latter as opposed to the former alternative.

The demands for additional public services that arise from the rapidly increasing population and its concentration in the urban and suburban areas are placed initially on the local units of government. These demands for more and collective services at this level may be expected to increase. Local units will be forced to increase rates of tax, and states will also be required to increase local shares of state-collected taxes to finance these needs. An expanded federal government role in meeting these essentially local needs may or may not take shape. Again it seems difficult to predict the result of what will be, fundamentally, a struggle between the centralist and the decentralist conception of the American polity.

Two predictions can be made with a reasonable degree of certainty. The size of the public sector will increase unless some major change in the Cold War should be realized. In terms of absolute size, this prediction seems almost certain. In terms of the relative share of the total economy, the prediction seems more questionable, but the student who is impressed by historical experience need only refer again to the tables in Chapter 4. While Wagner's law of ever-increasing governmental activity has little logical support, facts seem never to have refuted its validity.

The second prediction that seems somewhat less certain is that, within the foreseeable future, there will be no revolutionary reforms in the tax or the expenditure structure. The changes that may be introduced will be marginal, and the effects of changes in fiscal philosophy, should these occur, will take place slowly. Fiscal institutions, as all others, tend to assume lines of their own, and the student of the public finances would be wise to recognize this.

INDEX

INDEX

A

Ability-to-pay principle, 167–70, 258
Accelerated amortization, 310–11
Adjusted gross income, 267–73
Affluent Society, The, 181
Agricultural expenditures, 237–40
Agriculture, federal aid to, 497
Air traffic, regulating, 243
Airport construction, 243
Amortization, accelerated, 148–49, 310–11
Anarchy, orderly, 3–4
Announcement effects of income tax, 282–84
Appropriations Committee of the House of Representatives, 191
Army Corps of Engineers, 210, 241
Assessed values and real values, 453–55
Assessment
  of property value, 449–53
  review and appeal of, 455
Atomic Energy Commission, expenditures for, 216
Automotive revolution, impact of, 518–19
Average-cost pricing, 510–13
Average rate of tax, 268
Averaging of income, absence of, 288–90

B

Balanced budget
  critical limit hypothesis of, 78–81
  economic effects of, 70–86
  at high-level income and employment, 118
  imperialistic hypothesis of, 84–85
  neutrality hypothesis of, 71–72
Balanced budget multiplier; *see also* Unit multiplier
  computing, 73–74
  time sequence of, 76–77
Balanced budget rule, 115–18
Benefit principle of taxation, 170–73
Bonds
  constant purchasing power, 379
  government, long-term, 362–63
  lottery, 378
  Treasury, long-term, 362–63
Borrowing, government
  from commercial banks, 96
  from Federal Reserve banks, 96–98
Borrowing, governm
  necessity and time
  from the "Public,"
  versus taxation, 34
British income tax, 2
Budget
  balanced; *see* Bala
  built-in flexibility,
  classifications of
    192–96
  as a combined acc
  deficit, financing
    through commerc
    through Federal
    through the "Pub
  expenditure; *see al*
    Department of
    1961, 217
    and the executive
    for fiscal 1961, p
    nondefense, prop
    and receipts, pr
    295
  federal, 187–201
  and the national ec
  high-level, 79–81
  increase, effects of,
  meaning of, 187–92
  process, 189–92
  reforms, recommen
    capital budgetin
    performance bud
  surplus; *see* Surplu
  unbalanced, econo
Budget and Accounti
Budgeting
  capital, 199–200
  performance, 198–
Built-in flexibility, b
Bureau of the Budge
Bureau of Land Man
Bureau of Public Ro
  federal-aid autho
    by, 529
Bureau of Reclamati

Capital and incom
Capital budgeting, 1

Capital gains, 263, 270
converting income into, 291
favorable tax treatment for, 148, 290
Capital losses, 263, 293
Capital tax, general, effects of, 457–59
Capitation tax, 282
Cash budget and trust fund accounts, 196–98
Certainty, criterion of, 178–80
Certificates of indebtedness, 364
"Civil" expenditures, federal, 45–47
Civil War, 44
federal expenditures, 34–35
Clark, Colin, 79
"Coin of the realm," 328
Cold War, 40, 45, 70–71, 84, 218, 539, 540
Collection and enforcement, personal income tax, 274–77
Collective choice
compared with private choice, 49–50
effect of, on corporate income tax, 306–7
Collective goods, 17–22, 467–73
common defense, 19
law and order, 19–20
monetary stability, 20
and private goods, distinction between, 19
range of, 19–21
Collective interest and market activity, 25
Collective "rationality" and fiscal institutions, 176–83
Commerce and housing, expenditures for, 243
Commercial banks
borrowing from, 96
holdings of federal securities, 366
Committee for Economic Development, 121
Commodity Credit Corporation, 240
Common defense, as collective good, 19
Community facilities and services, 401–2
Congestion, social cost of, 531–33
Consols
definition of, 370–71
as one form of the national debt, 378
Constant purchasing power bond, 379
Consumer sovereignty, principle of, 5–6
Contributions, as income tax deduction, 264–65
Corporate income, double taxation of, 147, 299–301
Corporate mergers and loss carry-over and carry-back, 308–11
Corporation income tax, 295–312
base, 296
carry-over and carry-back provisions of, 308–11
collections and individual income tax collections, 299
direct economic effects of, 301–3
Corporation income tax—*Cont.*
effect of
on collective choice, 306–7
on economic growth, 306–7
incidence of, 303–6
rate structure, 296–97
rationale of, 297–98
revenue, instability of, 298–99
shifting of, 303–6
special features of, 308–12
Cost-benefit comparisons, 209–12
Cost-benefit estimation, difficulties in, 212–13
Cost-benefit ratio, 210–11
Cost-plus contracts, 222–23
Council of Economic Advisers, 108
Criterion problem, 203–4
Critical limit hypothesis of balanced budgets, 78–81
Currency inflation without taxation, 331–32

D

Davis-Bacon Act, 81
Debt; *see also* Public debt, National debt
creation; *see* Borrowing
versus equity financing, 301–2
"fake," 349, 350
foreign, 346–47
issue and taxation, appropriate uses of, 351–52
local, versus national debt, 356–57
state-local, 403
Decision making
governmental, 9–16
rationality in, 205–6
Declaration of Estimated Tax, 275
Deductions and exemptions, personal income tax, 263–67
Defense, internal, as collective good, 19–20
Deficit
creation, practical considerations in, 92–95
expenditure increase as cause of, 88–91
federal, and state-local, 98
reduction in taxes as cause of, 91–92
ways of creating, 87–92
Deficit financing, 87–99
Deficit spending as cause of increase in national money income, 90
Democracy, public finances of, 15
Department of Defense
budget of, 222
expenditures for, 216–28
proposed budget expenditures for 1961, 217
Depletion allowance, 311–12
Differential benefit, principle of, 173

Direct pricing through tolls, 524–25
Direct tax, 281
Direct taxation, incidence of, 179
Discrimination by income size, 256–58
Discriminatory "pricing," indirect redistribution through, 159–61
Displacement and scale effects, 51
"Dividends Received Credit," 300
Divisible benefits, 24
Double taxation
  of corporate income, 147, 299–301
  of saving, 146–47, 283–84

E

Earmarking of taxes, growth of, 520–21
"Easy" money policy, 111–13
Economic effects
  of corporate income tax, 301–3
  of inflation, 333–37
  of personal income taxation, 280–94
Economic efficiency and fiscal neutrality, 129–41
Economic growth
  effects of corporation income tax on, 306–7
  fiscal institutions accelerating, 148–50
  fiscal institutions retarding, 145–48
  as a fiscal objective, 142–52
  and inflation, 32–33
  as a policy objective, 150–51
Economic opportunity, education as a means of equalizing, 157
Economic organization, 4–5
Economic rent, modern theory of, 444–45
Economics of unbalanced budgets, 100–105
Economy
  market; *see* Market economy
  neutral political, growth in, 143–44
  no-government, 3–8
  real-world, growth in, 144–45
  voluntary, 6
Education
  economic effects of public financing of, 392–95
  expenditure for
    economic rationale of, 390–91
    federal government support of, 395–96
  extension of benefits from, 472
  federal grants to, 497–98
  financing and operation of, 391–92
  as a form of investment, 394–95
  as a means of equalizing economic opportunity, 157
  public operation and public financing, 391–92
  research, expenditure for, 149
  "social" benefits of, 393–95
  state-local expenditures for, 389–96
Efficiency
  in federal spending, 202–15
  fiscal, 137, 140
  as a fiscal norm, 137–40
  high-level, and public expenditure, 204–5
  and interdependence, 213–14
  low-level, 206–8
  notion of, 202–3
  second-order, 133–36, 202–3
Efficient fiscal system; *see* Fiscal system, neutral
Eisenhower, President
  and budget for fiscal 1960, 194
  and budget for fiscal 1961, 189–91
  and farm price supports, 239–40
  and federal gasoline tax, 246
Employment
  government, 32–33, 42
  and prices and national money income, 66–68
  tax, 320–25
    base and rate structure, 323–24
    incidence and economic effects, 324–25
    receipts, 1950–61, 320
Enforcement and collection, personal income tax, 274–77
Equal-treatment-for-equals principle, 137, 165–67
Equality of opportunity, 155–62
Equity financing versus debt, 301–2
Equity, fiscal, and efficiency, 137
Equity principle of taxation, 165–67
  primary objection to, 167
Estate tax
  and gift taxes, 315–20
  and inheritance tax, distinction between, 316–19
Excise tax
  effect of
    on consumer prices and rents, 417
    on price, monopoly profits, and rents, 420–21
    on rents, 416
    on sales, 418
  partial excess burden of, 422
  popular image of, shifted to consumer, 414
  receipts, federal, fiscal 1961, 315
  specific, effect of, 413–22
  sumptuary and regulatory, 409–12
Excise taxation, 405–24
  federal, 313–15
  specific, economic effects, 412–23
Executive and the expenditure budget, 187–88
Exemptions and deductions, personal income tax, 263–67

Expenditure
agricultural, 237–40
for education and research, 149
educational, 390–96
federal, 185–248
agency classification, 194
"civil," and state-local expenditure, 45–47
in constant dollars, 37
functional classification, 192–94
for highways; *see* Highways
for military establishment, 219–22
for military personnel, 218–19
for national security, 216–29
nondefense, 230–48
proposed for fiscal 1961, 231
object classification, 195–96
proposed budget, Department of Defense for 1961, 217
proposed for fiscal 1961, 194
and receipts, proposed, 197
general, conception of, 136
obligational authority and, 224
as per cent of GNP, 39
for procurement, 222–24
productive, 31
to secure nontaxable income, 302–3
for "social overhead" capital, 149
social security, 245–46
"social service," 235–37
social welfare, 147–48
state-local; *see* State-local expenditures
and taxation decisions, 180–82
total government, 34–40
transfer, 31
trust fund, 244–47
growth of, 46
war and war-related, 44–46
Expenditure budget and the executive, 187–88
Expenditure increase as cause of deficit, 88–91
Expenditure patterns, state-local, 385–404
Expenditure reduction, as way of creating a surplus, 100–101

F

"Fake" debt, 349, 350
Federal aid; *see* Grants-in-aid
Federal budget; *see* Budget, federal
Federal Communications Commission, 505
Federal debt; *see* Debt, National debt, Public debt
Federal estate tax, 316–19
Federal excise taxation; *see* Excise tax
Federal expenditures; *see* Expenditures, federal
Federal gift tax, 319–20
Federal grants-in-aid; *see* Grants-in-aid
Federal Power Commission, 505
Federal Reserve banks
and bond prices, 362–63
"borrowing" from, 96–98
holdings of federal securities, 367
and monetary policy, 111–12
national debt held by, 355–56
and retirement of debt, 103–4
Federal Reserve Board, 111, 429
stabilization policy of, 375–77
Federal Reserve System, 375
Federal revenue sources, 313–26
employment taxes, 320–25
estate and gift taxes, 315–20
excise taxation, 313–15
Federal securities
commercial bank holdings of, 366
Federal Reserve holdings of, 367
Federal spending, efficiency in, 202–15
Federal-state fiscal coordination, 482–500
Federal and state-local division of fiscal responsibility, 386–87
Federal taxation, 249–337
Federalism, fiscal and economic aspects of, 465–81
Finance
functional, 124–26
and international affairs, 230–33
Fiscal asymmetry, fundamental, 164–65
Fiscal authority
economic aspects and political realities, 473–74
independent, 466
Fiscal capacity, interarea differences in, 476–78
Fiscal choice, process of, 178
Fiscal coordination, federal-state, 482–500
Fiscal institutions
accelerating economic growth, 148–50
and collective "rationality," 176–83
retarding economic growth, 145–48
and social goals, 127–83
Fiscal neutrality and economic efficiency, 129–41
Fiscal norm, efficiency as, 137–40
Fiscal objective, economic growth as, 142–52
Fiscal policy
advantages of monetary policy over, 112–14
norms for, 106–15
rules for, 115–26
Fiscal process, redistribution through, 153–63
Fiscal relations, intergovernmental, 463–500

Fiscal responsibility, division of, between federal and state-local governments, 386–87
Fiscal system
ideally neutral, 129–33
second-order efficiency, 133–36
state and local, 383–462
Foreign aid, expenditure for, 231–33
Foreign debt, 346–47
Fraudulent income tax returns, 276–77
"Full Employment Act," 108
Full employment economy, 351
"Full employment" policy, 108–10
Functional finance, 124–26

G

Galbraith, Professor, 181
Gambling, taxing of, 411
Gasoline taxes, 521–22
General government, expenditures for, 244
General revenue, state-local, sources of, 405–24
General sales tax; *see* Sales tax, general
General tax, 280–82
"ideal," 281
General Theory of Employment, Interest, and Money, 58
"General welfare," defining, 12
George, Henry, and single tax, 443–44
Gift and estate taxes, 315–20
Government
activity, measure of
employment, 32–33
expenditure, total, 30–34
real cost, 29–34
relation to gross national product, 33–34
relative to gross national product, 33–34
resource absorption, 31–32
bonds, 361–63
long-term, 362–63
debt; *see* Debt, National debt, Public debt
definition of, 9, 11–16
employment, 32–33, 42
expenditure; *see* Expenditure
impact of, 28–29
as individuals, 15–16
and market economy, 17–27
"organismic" conception of, 12
representative, public finances of, 15
resource absorption, 31–32, 40–41
securities; *see* Federal securities
services
measure of the value of, 29–34
miscellaneous, 27
Government sector
in national income accounts, 52–54
reasons for growth of, 44–51
Grants-in-aid
for agriculture, 497
conditional, 492–93
for education, 497–98
for highways, 495–96, 528–29
for housing, 498
for public assistance, 496–97
for public health, 498
to states and local governments, 236, 493–99
for unemployment compensation administration, 498
Grants, unconditional or bloc, 490–92
Great Depression, 36, 40, 41, 45, 58, 108, 116, 238, 287, 331
Gross national product
and built-in budget flexibility, 120–21
defined, 33
government activity relative to, 33–34
items included in, 52–54
measure for, 58–59
size of national debt in comparison to, 361

H

Head tax, 282
Health and welfare, state-local expenditures
public assistance, 397–99
public hospitals, 399–401
Highway construction, grants-in-aid, 528–29
Highway financing
location of responsibility for, 528–31
and operation, 517–34
Highway investment and expenditure, criteria for, 525–28
Highway taxes
evolution of, 519–20
as user prices, 521–25
Highway Trust Fund, 197–98, 530
expenditures, 246–47
Highways
federal aid for, 495–96
as public utility, 519
state-local expenditures for, 397
Highway-user taxes, 525
Hoover, Herbert, 116
Hospitals, public, 399–401
House Appropriations Committee, 191
House of Representatives approval of federal expenditure, 191
House Ways and Means Committee, 191–92
Housing and commerce, expenditures for, 243
Housing grants-in-aid, 498

I

Imperialistic hypothesis of balanced budgets, 84–86
Incidence of direct taxation, 179
Income
  absence of averaging of, 288–90
  accrual conception of, 251
  basic problems of measurement of, 253–55
  and capital, taxation of, comparison, 435–40
  converting into capital gains, 291
  definition of, 251–53, 262
  determination, principles of, 58–66
  distribution in the no-government economy, 153–55
  elasticity of government services, 48–49
  flow conception of, 251
  in kind, 262–63, 283
  local, and state tax, 407–9
  measurement of, basic problems of, 253–55
  size, discrimination by, 256–58
  wheel of, 4
Income tax; *see also* Tax, Taxation
  announcement effects of, 282–84
  British, 276–77
  collections, individual and corporate, 299
  corporate; *see* Corporate income tax
  effects of existing deficiencies in, 287–93
  general proportionate, 135
  personal; *see* Personal income tax
  progression, 146
  rates and inflation, 273–74
  returns
    fraudulent, 276–77
    for 1957, individual, 273
  state
    rates of, 407–9
    in relation to residence, 408–9
Indirect taxation
  defined, 179
  public supply, 503–4
"Inefficient purchaser" model, 81–84, 85
Inflation
  conjectural history, 327–28
  currency, without taxation, 331–32
  economic effects of, 333–37
  and economic growth, 332–33
  and income tax rates, 273–74
  modern version, 328–31
  and political stability, 331
  as a tax, 327–37
Inheritance tax and estate tax, distinction between, 316–19
Instability, social justice, and monopoly, 7
Interdependence and efficiency, 213–14
Interest
  on the federal debt, 244
  on government debt, 52
  as personal income tax deduction, 265–66
  on public debt, 52
Interest rate, functioning of the monetary system and, 68
Internal defense, as collective good, 19–20
Internal Revenue Code, 296
Internal Revenue office, and withholding tax, 274–75
International affairs and finance, 230–33
Interstate Commerce Commission, 505
Interstate differences in public service standards, 478–79
Interstate Highway Network, 74, 246, 397, 530
Investment
  intended, and intended saving, 61–62
  multiplier, 63–65
    analysis of, 88–89
    and saving, equality of, 60–61

K

Keynes, Lord, 58, 108, 116
"Keynesian" hypothesis, 73
"Keynesian revolution," 360
Korean War, 45

L

Labor and welfare expenditures, 235–37
Law and order, as collective good, 19–20
Least-price distortion, 134, 137–38
Least sacrifice, principle of, 169
Leisure
  decreasing "price" of, 284–85
  versus work, 282–83
Lerner, Abba, 124, 332
Loss carry-over and carry-back and corporate mergers, 308–11
Lottery bond, 378
Lump-sum subsidy, 135–36
Lump-sum tax, 135, 281–82

M

Marginal benefit, limitation on, principle of, 172–73
Marginal-cost pricing, 513–14
Marginal productivity distribution, ethics of, 155–56
Marginal propensity
  to consume, 63
  to save, 64
Marginal rate of tax, 268
Market activity and collective interest, 25

Market economy
advantages of, 6
disadvantages of, 7
government and, 17–27
Marketable securities, maturity schedules of, 372
Marshall, Alfred, 412
Marshall Plan, 231
Maturity schedules of marketable securities, 372
Medical expenses, as personal income tax deduction, 267
Military defense; *see* National security
Military establishment, expenditure for, 219–22
Military personnel, expenditure for, 218–19
Military spending
aim of, 227–28
systems analysis applied to, 226–28
Minimum aggregate sacrifice, principle of, 169
Monetary policy
advantages over fiscal policy, 112–14
criteria for, 106–10
defined, 111
and fiscal policy, 110–14
Monetary stability
as collective good, 20
goal of, 109–10
Monetary system and interest rate, functioning of, 67–68
Money
creation, disguised, and real public debt, 347–50
income flow, 60
injection of, by nonfiscal means, 149–50
Monopoly, instability, and social justice, 7
Motor vehicles, registered, and vehicle miles traveled, 518

N

National debt, 339–81; *see also* Debt, Public debt
alternative management policies, 374–77
composition of, 361–65
certificates of indebtedness, 364
government bonds, 361–63
treasury bills, 364–65
treasury notes, 363–64
consols as one form of, 378
existing, 359–69
limitation, 367–68
management of, 370–81
objectives, 373–74
possible innovations in, 377–80
origin of, 359–61
ownership of, 365–67
National debt—*Cont.*
versus local debt, 356–57
principal of, 360
size of, in comparison to GNP, 361
National Defense Education Act, 396
National Defense Graduate Fellowships, 210
National economy, and federal budget, 55–126
National income
accounts, government sector in, 52–54
defined, 58–59
determination
no-government economy, 57–69
simple model of, 58–66
real, 59
two measures for, 59–60
National money income, 59
deficit spending as cause of increase in, 90
employment, and prices, 66–68
National security, federal expenditures for, 216–29
NATO, 466
Natural resources, federal expenditures on, 241–43
Net investment, defined, 59–60
Neutral fiscal system, 129–33
Neutral political economy, growth in, 143–44
Neutrality hypothesis of balanced budgets, 71–72
New Deal, agricultural policy of, 239
No-government economy, 3–8
growth in, 143
income distribution in, 153–55
national income determination in, 57–59
Nondefense expenditures, federal, 230–48
proposed for fiscal 1961, 231
Nonfiscal policy
injection of money into economy by, 149–50
redistribution of wealth by, 161–62
Nonincome bases for tax discrimination
age, 255
family size, 255
income source, 255–56
Nontaxable income, expenditure to secure, 302–3

O

Obligational authority and expenditures, 224
Occupational choice, rational, 285–87
Old-age assistance
expenditures for, 398
grants, 236
Old Age and Survivors Insurance Act, 245

Old Age and Survivors Insurance Trust Fund, 245, 321
Operations research, 207–8, 226
Optional standard deduction, 268
Orderly anarchy, 3–4
"Organismic" conception of government, 12
Organization, coercive, 19

P

Parity, concept of, 239
Parks and recreational facilities, 402
Partial equilibrium models, limitations on, 422–23
Peacock, Alan T., 51
Performance budgeting, 198–99
Personal income taxation, 261–79; *see also* Income tax, Tax, Taxation
  base, definition of, 262–63
  collection and enforcement, 274–77
  conceptual problems, 251–60
  deductions
    contributions as, 264–65
    interest as, 265–66
    medical expenses as, 267
    miscellaneous, 267
    taxes as, 266
  economic effects, 280–94
  exemptions and deductions, 263–67
  rate structure of, 267–73
Personal property, 448; *see also* Property
Physiocrats, 441
Police and fire protection, 401–2
Political boundaries and indivisibility, 21
Political decentralization and individual choice, 474–76
Political stability and inflation, 331
Poll tax, 282
Post Office Department, 209
Postal system, 243
Present-value criteria, 211
Price level stabilization; *see* Monetary stability
Price supports, federal program of, 240
Prices in national money income
  and employment, 66–68
  role of, 66–67
Pricing
  average-cost, 510–13
  criterion for publicly operated facilities, 509–15
  marginal-cost, 513–14
  public utility
    constant returns, 512
    increasing returns, 513
Private choice, compared with collective choice, 49–50
Private debt, analogy with public debt, 345–46
Private goods
  and collective goods, distinction between, 19
  public supply of, 503–16
Private services publicly provided, 24–25
Procurement, expenditure for, 222–24
Productive expenditures, 31
Progress and Poverty, 443
Progressive income tax, 284–87
Progressive and proportional income taxation, 284–87
Progressive tax, 256–59
  bases for, 258
  rates, 169–70
Property
  definition and classification of, 447–49
  tax, 447–62
    actual, effects of, 461–62
    economic effects of, 457–62
    general, 448–49
    ideological origins of, 440–45
    specific, effects of, 460
  value, assessment of, 449–53
Proportional tax, 256–57
"Public," borrowing from, 95
Public assistance, 397–99
  grants, 496–97
  programs, economic effects of, 398–99
Public debt; *see also* Debt, National debt
  analogy with private debt, 345–46
  burden of, 342–43
  external and internal, 346–47
  interest on, 52
  principles of, 341–58
  real, and disguised money creation, 347–50
  retirement of, 353–54
  stabilization aspects of, 354–56
  transfer argument of, 343–45
Public enterprise, organization of, 515
Public expenditure; *see* Expenditure
Public finance
  conditional prospects and projections regarding, 537
  "principles" of, 16
  and public operation
    of education, 391–95
    of services, 21–22
  subject of, 9–11
  traditional principles of, 164–75
Public health grants, 498
Public hospitals, 399–401
Public operation and public financing of services, 21–22
Public roads, traditional attitudes toward, 517–18

Public school system; *see* Education
Public sector of American economy
  development of, 28–43
  growth of, 44–51
Public service standards, interstate differences in, 478–79
Public services; *see* Collective goods, Government services
Public supply
  and indirect taxation, 503–4
  of private goods, 503–6
Public utilities, 24, 401, 504–6
  highway as, 519
  pricing
    constant returns, 512
    increasing returns, 513

Q

Quasi-collective goods and services, 22–24

R

Rate schedule for 1958 tax return, 269
Rate structure
  corporation income tax, 296–97
  of personal income tax, 267–73
Rationality
  criterion of, 176–78
  in decision making, 205–6
Real income as a tax base, 145–46
Real national income, 59
Real property; *see also* Property
  defined, 448
  taxes, and collective decisions, 462
Real-world economy, growth in, 144–45
Receipts and expenditures, budget, proposed, 197
Recession of 1957–58, 94–95, 112
Recreational facilities and parks, 402
Redistribution
  direct
    and general, through taxes and subsidies, 158–59
    among specific groups, 158–59
  by fiscal process, 153–63
  indirect, through discriminatory "pricing," 159–61
  by nonfiscal means, 161–62
Regressive tax, 257–58
Regulatory measures, as collective good, 20–21
Rent
  economic, modern theory of, 444–45
  Ricardian theory of, 442–43
Research and development, military, 225–26
Resource absorption, governmental, 31, 40–11
Retail sales tax; *see* Sales tax, general
Revenue sources
  federal; *see* Federal revenue sources
  state-local, 405–24
Revenues, cyclical instability of, 298–99
Ricardian theory of rent, 442–43
Ricardo, David, 442
Roosevelt, Franklin D., 116

S

Sales tax
  general, 135, 425–34
    advantages of, 431–32
    disadvantages of, 432–34
    economic effects of, 427–31
    effect on prices, 428–29
    secondary effects of, 431
    and specific excise tax, distinction between, 427–28
Samuelson, Paul, 172
Savings
  double taxation of, 146–47, 283–84
  incentives, 283–84, 287
  intended, and intended investment, 61–62
  and investment, equality of, 60–61
Savings Bonds, Series E, 362
Scale effects, displacement and, 51
Schedule of average rates of tax on taxable income, 271
Securities, federal; *see* Federal securities
Senate approval of federal expenditure, 191
Senate Finance Committee, 191–92
Series E Savings Bonds, 362
Services indivisible; *see* Collective goods
Shifted tax, 280–81
Shifting of corporation income tax, 303–6
Single tax, and Henry George, 443–44
Sixteenth Amendment, 261
Slum clearance, 243
Smith, Adam, 442
Social goals, and fiscal institutions, 127–83
Social justice, monopoly, and instability, 7
"Social overhead" capital, expenditures for, 149
Social Security Act, 324
Social security expenditures, 245–46
Social security program, 197–98, 236
Social security system, 321–23
Social services, 25–26
  defense of, 26
"Social utility," 12–16
  defining, 12
Social welfare, 13–16
  expenditures, 147–48
"Soil bank" plan, 240
Spillover effects, 467–73

Stabilization policy; *see* Monetary stability
State-local debt, 403
State-local expenditure, 35–38, 47–48
  for education, 389–96
  and federal "civil" expenditure, 47
  and federal government, division of fiscal responsibility between, 386–87
  by functional groups, 387
  for highways, 397
  patterns, 385–404
States and local governments
  division of fiscal responsibility between, 387–88
  federal grants-in-aid to, 493–99
  general revenue sources, 405–24
  health and welfare expenditures, 397–401
  income tax, 407–9
  securities, tax exemption of interest on, 403
  tax as a regulatory device, 411–12
Suboptimization, 206–7
Subsidies and taxes, direct and general redistribution through, 157–58
Subsidy, lump-sum, 135–36
Sumptuary tax, defined, 410
Supreme Court, 29
Surplus, ways of creating, 100–102
  expenditure reduction, 100–102
  tax increase, 101
Surplus financing, 100–105
Surplus funds, disposing of, 102–4
  added to Treasury cash balances, 102–3
  to retire government debt instruments, 103–4
Surpluses, practical considerations, 101–2
Systems analysis
  applied to military spending, 226–28
  from low to high levels, 208–9

T

Tax
  base
    definition of, 262–63
    real income as, 145–46
  British, 290–91
  capitalization, 458–60
  capitation, 282
  collections, corporate, and individual income tax collections, 299
  corporation; *see* Corporation income tax
  credits, 488–89
  deductibility, 487–88
  direct, 281
  discrimination, nonincome bases for, 255–56
  employment; *see* Employment tax
  exemption of interest on state-local securities, 403
Tax—*Cont.*
  federal gift, 319–20
  gasoline, 521–22
  general, 280–82
    "ideal," 281
    sales, 135
  head, 282
  highway; *see* Highway tax
  income; *see* Income tax
  increase, as way of creating a surplus, 101
  inflation as, 327–37
  lump-sum, 135, 281
  multiple-stage, 425–26
  personal income; *see* Personal income tax
  poll, 282
  progressive, 256–59
  property; *see* Property tax
  proportional, 256–57
  rates, setting of, 455–57
  receipts, federal excise, fiscal 1961, 315
  reduction method of creating a deficit, 91–95
  regressive, 257–58
  sales; *see* Sales tax
  schedules, 268–69, 71
  sharing, 489–90
  shifted, 280–81
  single, and Henry George, 443–44
  single-stage, 426
  sources
    common, 485
    separation of, 482–85
  sumptuary, defined, 410
  supplements, 486–87
  system, with unconditional or bloc grants, 490–92
  treatment for capital gains, favorable, 148
  turnover, 425–26
  and the user price, 506–9
Taxable income, 269–72
  schedule of average rates of tax on, 271
Taxation
  ability-to-pay principle of, 167–70
  benefit principle of, 170–73
  versus borrowing, 341–42
  of capital, 435–46
    and income, comparison, 435–40
  currency inflation without, 331–32
  and debt issue, appropriate uses of, 351–52
  direct, incidence of, 179
  double
    of corporate income, 147
    of saving, 146–47

Taxation—*Cont.*
equity principle of, 165–67
expenditure decisions, 180–82
federal, 249–337
excise, 313–15
indirect
defined, 179
and public supply, 503–4
personal income; *see* Personal income taxation
progressive; *see* Progressive taxation
of transfers of wealth, 146
Wicksell principle of, 132–33
Taxes
excise; *see* Excise taxes
growth of earmarking of, 520–21
as personal income tax reduction, 266
reduction in, as cause of deficit, 91–92
and subsidies, direct and general redistribution through, 157–58
third-structure, 523–24
and utility rates and user prices, 501–34
Tax-limit amendment, 79–81
Tennessee Valley Authority, 136, 138
"Tight" money policy, 111–13
Tolls, direct pricing through, 524–25
Transfer argument of public debt, 343–45
Transfer expenditures, 31, 52–54
Transfer payments, defined, 26, 31
Transfers of wealth, taxation of, 146
Treasury bills, 364–65
Treasury bonds, long-term, 362–63
Treasury Department
and bond prices, 362–63
debt management policies, 371–80
objectives, 374
sale of government securities, 97
and surplus funds, 102–3
Treasury notes, 363–64
Trust fund
accounts, 246–47
and the cash budget, 196–98
expenditures, 244–47
growth of, 46
highway, 246–47

U

Unbalanced budgets, economics of, 87–105
Unemployment compensation administration grants, 498
Unequal treatment of unequals, 166–67
Unit multiplier analysis, necessary conditions for, 74–77
"Unit multiplier hypothesis," 73–78
appraisal of, 77–78
United States Information Agency, 230
Urban and community redevelopment, 402
Urban renewal, 243
User price
determination of, 509–15
highway taxes as, 521–25
and the tax, 506–9
and taxes and utility rates, 501–34

V

Values, real and assessed, 453–55
Vehicle registration fee, 522–23
Veterans Administration, classification by objects under, 195–96
Veterans' service and benefits, 234–35
Voluntary economy, 6

W

Wagner, Adolf, 48
Wagner's law of increasing public activity, 48–50, 540
Walsh-Healy Act, 81
War and war-related expenditure, 44–46
Water resources, development of, 241
Wealth, taxation of transfers of, 146
Welfare and labor, expenditures, 235–37
Wicksell, Knut, 132–33, 141, 172, 182
Wicksell principle of taxation, 132–33
Wiseman, Jack, 51
Withholding tax, 274–76
Work versus leisure, 282–83
World War I, 40, 45
World War II, 36–37, 39, 40, 41, 44, 47–48, 78, 84
financing of, 329–31

This book has been set on the linotype in 12 point Bodoni Book, leaded 1 point. Part and chapter numbers are in 18 point Metro italics; part and chapter titles are in 18 point Metro roman. The size of the type page is 27 by 46½ picas.