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PRINCIPLES OF PUBLIC FINANCE

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Preface

Principles of Public Finance is intended primarily for use in the introductory course in public finance. The emphasis is on developing an understanding of the basic principles and concepts that economists use to explain and evaluate the performance of the public sector. We have attempted to accommodate students with a limited background in economics by using only those theoretical techniques ordinarily covered in the standard principles course. Possible exceptions are the discussion of efficiency conditions in Chapter 2 and indifference curve analysis of labor supply in the appendix to Chapter 8. Both of these topics can be skipped without loss of continuity. Our classroom experience convinces us that students can gain a sophisticated understanding of public sector economics through judicious application of simple analytical tools.

A number of individuals have read and commented upon preliminary drafts of portions of the manuscript. Among those who have been most helpful are Roy Adams of Iowa State University, Gerald Auten of Bowling Green State University, Ann Horowitz of the University of Florida, Charles Knoeber of North Carolina State University, Jerry Miner of Syracuse University, David Sjoquist of Georgia State University, and Timothy Smeeding of the University of Utah. We acknowledge their assistance without implicating them in the result. For assistance in preparation of the manuscript, we wish to thank Sandy Aspengren, Beth Tesdahl, Nancy Wolff, Jane Clark, and Lorine Newcomer.

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Contents

1 The Public Sector

The subject matter of public finance is the description and analysis of the economic activity of government. Of course, there is disagreement over the range of legitimate governmental economic activity. While governmental responsibility is conceded in some cases, it is disputed in others. The proper scope of government actions is, therefore, a matter of concern to students of public finance. Central to the study of public finance is analysis of the impact of government on the behavior and well-being of households and firms. The subject of study becomes individual decision making units of the private sector, with certain governmental decisions taken as given. In this important sense, government and governmental activities are a major thread woven into the social fabric.

The actions of governments affect the lives of everyone in society. Legislative enactments, administrative decisions, and judicial interpretations govern and modify our behavior. Economic policies of government address the problems of allocation of scarce resources, stabilization of the economy, and distribution of incomes and wealth. Implementation of these policies requires taxation, public borrowing, and public expenditure. Public finance deals with the effects—intended and unintended—of government revenue and expenditure policies on the fulfillment of allocation, distribution, and stabilization objectives.

ECONOMIC EFFECTS OF GOVERNMENT POLICIES

Almost any revenue or expenditure policy has some effect on the allocation of society's scarce resources. Through market and political institutions, preferences are expressed and choices are made that concern want satisfaction. When government collects money to spend on typewriters, computers, and aircraft carriers, it is bidding labor, energy, materials, plant, and equipment away from production of apartments, automobiles, wheat, and other nongovernmental uses.

Markets are the primary means of allocating resources, mainly through the direction given by relative prices determined by market forces. Markets may fail to allocate resources efficiently, however, when they fail to serve as a means of generating socially correct relative prices. Consequently, too many of some goods and services and not enough of others may be produced. There are many potential causes of market failure. Monopoly power over prices distorts signals about relative costs of different goods and services. Consumers and producers often lack information about consumption and production opportunities. Resource mobility from one industry to another may be so limited that allocation does not respond to the direction given by changes in relative prices.

Other potential causes of market failure include the pressure of "externalities" and "public goods." In the case of externalities, acts of producing or consuming have effects external to the firms or consumers in control of the activities. Such effects can confer benefits or impose harm on others. For example, it is generally believed that, when an individual is educated, all of society benefits, but when an individual pollutes the environment, others suffer. The externally affected parties may not have any effective means of expressing their preferences for more or less of the activities. When external benefits and external costs are not reflected in the demand and supply forces that determine relative prices and give direction to resource allocation, goods and services may be overproduced or underproduced. In the case of public goods, markets fail to achieve an efficient level of output of goods characterized by nonrivalry in consumption. These goods may be consumed by many persons simultaneously without any one person diminishing any other's consumption opportunities. Examples include national defense and transmission of television programs. In many cases, it is not feasible for firms producing public goods to charge a market price that excludes persons who do not pay it. Firms seeking to realize profits from the sale of goods and services may not produce these public goods at all, even though there is a substantial demand for them. For example, a lighthouse may not be provided even though a large number of boat and ship owners would benefit from its services. There may be no feasible way in which to exclude those who benefit but do not pay.

Economic policies can be devised to deal with the problems of underproduction or overproduction of goods that create externalities. For example, when externalities are beneficial, government can encourage production and consumption through subsidies. When they are harmful, government can discourage production and consumption through taxation.

In addition to expenditure and tax policies, government regulation can be used to encourage or discourage certain activities. Often, government itself chooses to produce goods and services. Government provision is most common in the case of public goods that cannot feasibly be provided privately, such as national defense or flood control.

Where markets fail, however, governments do not necessarily succeed. When markets are preempted by government, decisions are shifted to the political process with all of its imperfections. Society is faced with a choice between two imperfect alternatives. Implications of this choice are discussed in the chapters that follow, particularly Chapters 2 and 3.

In addition to its effect on allocation and thus on the mix of goods and services produced, government also affects the distribution of income. Society may prefer distribution of incomes among its members that differs from that generated through markets. There is an obvious ethical question concerning the acceptable degree of inequality consistent with social order. There is also an economic question. Production of goods and services is dependent on incentives that motivate individuals to supply the needed inputs of capital and labor. Thus, the mode of distribution is central to the incentive system and, in this way, to production itself. Through markets, those who offer the services of factors they own are rewarded according to their contribution to production of goods and services that satisfy wants. Substantial inequality of income can be the result of unequal resource endowments. Unreasonable discrimination and other patterns of behavior unrelated to markets along with market imperfections such as monopoly power may add to inequality.

When there is a sense that certain classes of people will not receive socially acceptable rewards through markets, persons and organizations in the private sector engage in philanthropy and charity that, in effect, transfer income. However, private redistribution of income may not be sufficient to satisfy a social sense of justice. Government may then use its tax and expenditure power to transfer incomes. Progressive tax rate schedules tend to redistribute income to some extent.

On the expenditure side, there is a vast amount of activity that is intended to redistribute income. For example, aid to families with dependent children and social security payments transfer income directly. Other programs redistribute income by providing goods and services that benefit certain classes of people. Low-income housing projects benefit families that qualify, and veterans' hospitals provide medical services to ex-military personnel. Some of these programs may have perverse effects. A welfare program may diminish incentives to work, and the earnings of some recipients may be lower than they would be without assistance. Minimum wage laws may cause unemployment or reduce hours worked and lower the total earnings of those employed at the minimum wage.

Finally, the overall level of tax revenues and expenditures can have important effects on the aggregate levels of output, income, and prices. In the private sector, aggregate levels of demand and supply may not be stable enough to provide for acceptable levels of employment and prices. History is replete with evidence that, without government stabilization efforts, markets can fail in this respect. The basic instruments of stabilization policy are monetary policies that control the stock of money and fiscal policies that increase or decrease rates of taxation and levels of government expenditure. The historical record, especially since the late 1960s, also provides evidence that government stabilization policy may not succeed and, on occasion, may even make matters worse rather than better.

MEASURES OF GOVERNMENT ACTIVITY

There is no truly adequate and feasible measure of the importance—or in a limited sense, the economic importance—of governmental activity. Some of the impact of governmental action is noneconomic or nonquantifiable. This may be the case with its effect on freedom. Some governmental activity may be economic and quantifiable in character but may involve incommensurable values. For example, when the value of government services is estimated, there are few prices to use as a means of estimating the value of such goods to society. Costs tend to be used instead. Cost, however, may overestimate the value of some public services and underestimate that of others.

Nonetheless, there are several useful cost-oriented measures of governmental activity. Total governmental expenditure is commonly used, particularly since data are easily available. Often, this measure is adjusted for price changes or stated relative to gross national product (GNP). Another measure is purchases of goods and services, which excludes transfer payments from total governmental expenditure. Finally, government employment is an appropriate measure for some purposes.

In Figure 1–1, government expenditures are shown for each calendar year since 1946.[1] Total expenditures grew from $46.7 billion in 1946 to more than $950 billion in 1980. In 1981, government expenditures exceeded $1 trillion for the first time. The federal share of total government expenditure has declined gradually since 1946 from more than 70 percent to about 60 percent.

Of the major components of spending, state-local expenditure on education and welfare has increased most rapidly since 1946. Together, these two functions accounted for half of state-local expenditure by 1980. At the federal level, expenditures on income security and health increased at the

[1]The data show expenditures of the federal, state, and local government sectors of the national income and product accounts (NIPA).

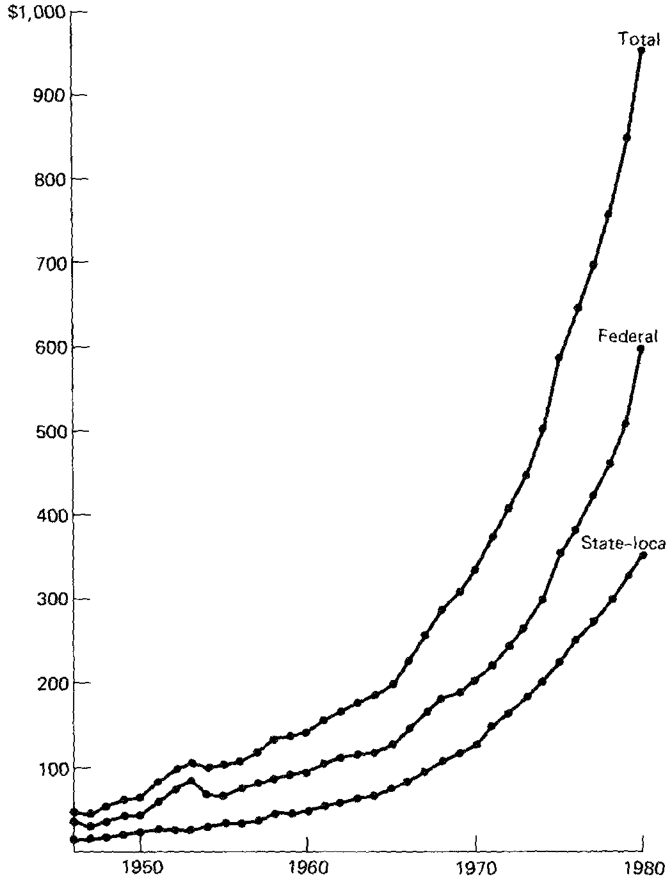

FIGURE 1–1 State-local, federal, and total government expenditures by calendar year (billions of dollars). Expenditures are shown for each calendar year since 1946. The federal share of total government expenditure has declined gradually to about 60 percent.

most rapid rate. By 1980, the health, education, and welfare functions represented almost half of federal expenditure. National defense had dropped to less than 25 percent. Reordering of priorities can have a significant impact on such relative shares. For example, in an address to a joint session of Congress on February 18, 1981, President Reagan called for greater spending to rebuild the nation's defense capabilities. He also asked for a reversal of the trend toward greater federal roles in social programs.

There are several problems in using aggregate government expenditures as a measure of the economic importance of government over time. Unadjusted data reflect changes in prices as well as real growth of government activity. Also, some growth of government expenditure would be expected along with growth of population and growth of the economy. Even when adjusted for changes in the price level, population, and the level of economic activity, trends in government expenditures do not tell the whole story. For example, law requires that new automobiles be equipped with seat belts and pollution control devices. These devices and seat belts are produced and installed, but these mandated costs of compliance are not included in government expenditures.

In Figure 1–2, government expenditures are shown in constant dollars. Expenditure in current dollars is reproduced from Figure 1–1, and

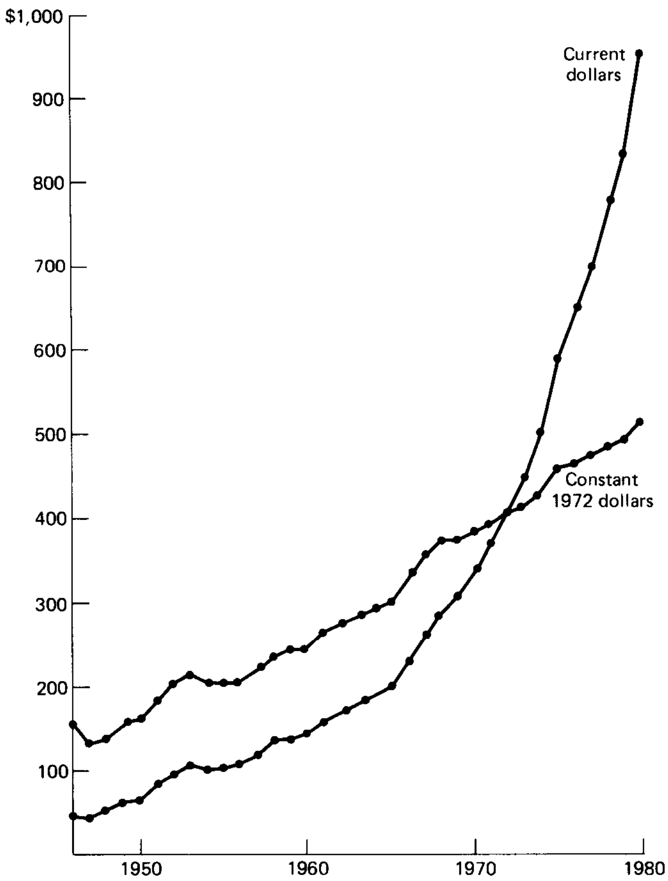

FIGURE 1–2 Total government expenditure in current and constant 1972 dollars (billions of dollars). Expenditure in current dollars is reproduced from Figure 1–1. Expenditure has been adjusted for inflation and is shown in current 1972 dollars. Part of the increase in expenditure since 1946 is due to inflation.

each year's total is adjusted by the implicit price deflator (1972 = 100) for government purchases of goods and services. Thus, the deflated expenditures provide a series for government expenditure in constant 1972 dollars. It is clear that part of the increase in expenditure since 1946 is due to inflation. Real per capita expenditure—measured in constant 1972 dollars—increased from $1,116 in 1946 to $2,327 by 1980. This growth must be attributed to factors other than inflation and population growth.

Various measures of government expenditure provide some indication of the economic importance of government activity. Each is helpful, but none provides a reading on the size of the public sector *relative* to the private sector or to the economy. Expressing government expenditure as a percentage of GNP can provide some sense of the relative growth of the public sector. This percentage is shown in Figure 1–3 for each year since 1946. It is clear that the public sector has grown more rapidly than the private sector; as measured by expenditures, the public sector has grown to more than one-third of aggregate economic activity.

Measures of cost do not indicate *how* the public sector meets the demand for public services. Some government programs absorb resources. In other words, they divert resources from the private sector. National defense, public safety, space exploration, and highways all absorb resources that could have been employed in the private sector. Other programs merely transfer purchasing power from one group of individuals in the pri-

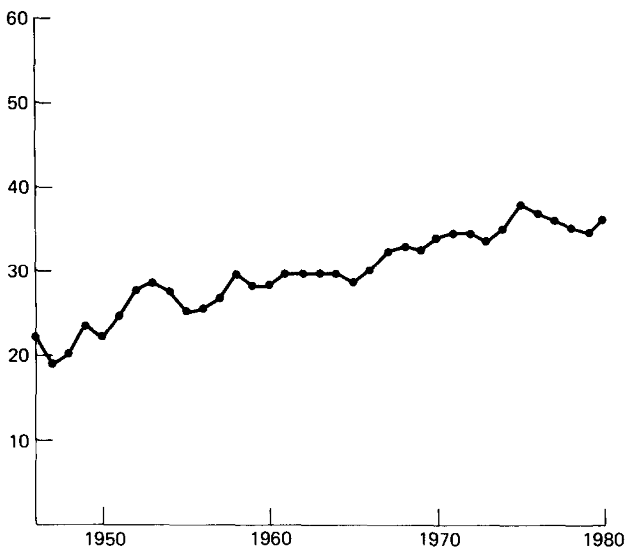

FIGURE 1–3 Total government expenditure as a percentage of GNP. Expenditure is shown as a percentage of GNP. This gives some indication of the size of the public sector relative to the economy. The public sector has grown to more than one-third of aggregate economic activity.

vate sector to another. Social security, public assistance, and unemployment compensation consist simply of transfer of income from one group to another. No inputs are reallocated from the private to the public sector. These income transfers do not affect the amount of output available in the private sector. They simply change patterns of demand (and supply) as the result of differences in demand between "donors" and recipients.

The extent to which government decisions *control* the allocation of resources is measured most appropriately by government purchases of goods and services. When purchasing power is transferred from one group to another, government does not control the allocation of resources. The recipients' decisions determine the allocation. When government hires factors of production or when government purchases final goods and services, government decisions control the allocation.

State-local purchases of goods and services have increased dramatically since 1946. The increase has been most pronounced since the mid-1960s. The increase was 170 percent from 1970 to 1980. Expenditures for education, highways, and health have accounted for most of this growth.[2] Federal purchases of goods and services have grown slowly by comparison. Purchases increased by only 108 percent from 1970 to 1980. National defense is the predominant federal government purchase. Defense spending grew slowly over that period. Expenditure on general government rose sharply, largely because of pay raises for federal employees.[3]

The most interesting difference between patterns of government purchases at the two levels is that state-local expenditure is almost entirely government purchases of goods and services, while only about one-third of federal expenditures are government purchases. Since about 1950, government purchases have accounted for more than 90 percent of state-local expenditures. At the federal level, however, government purchases have declined steadily as a share of federal expenditures. State-local and federal government purchases have been around 20 percent of GNP. The decline in the federal ratio of government purchases to GNP has been offset by an increase in the state-local ratio. Relative to the economy, government absorption of resources has not increased significantly since the early 1970s.

Not all government purchases represent government "production." Some are purchases of goods and services from firms in the private sector. One indication of the extent to which government is active in production—

[2]Mostly, the increase in health and hospital expenditure reflects increases in costs rather than extensions of services. Welfare services also grew rapidly. They are financed largely by federal grants, and growth has been most significant since 1970. These represent actual services to welfare recipients and should not be confused with cash transfers.

[3]A major component of general government outlays is interest paid on the national debt. These payments are treated as transfers in the national income accounts, since most of the debt was accumulated during past wars and recessions. Current productive capacity is unrelated to these federal obligations, which explains why the interest payments are not treated as a return to capital.

presumably for nonprofit motives—is government employment of factors of production. In the 1970s and early 1980s, government employed about 18 percent of all wage and salary workers.[4] The federal government employed about 3 percent of workers, and state-local governments employed about 15 percent. Since World War II, federal employment has declined steadily as a percentage of all workers. State-local employment increased steadily as a percentage of all workers until the late 1970s.

To a degree, these employment patterns reflect expenditure trends. State-local expenditure is services oriented. At a local level, for example, governments employ people to provide education, police and fire protection, refuse collection and disposal, and many other services. Any growth in these services normally requires additional employment of workers. In contrast, federal expenditure growth has been much greater for transfer payments. An increase in transfers need not require many additional employees.

It should be clear that there are various measures of the economic importance of government activity. It is also clear that the public sector has grown in importance. The growth is evident not only in absolute terms, but also relative to the private sector. What accounts for the absolute and relative growth of the public sector? Some of the growth is responsive to the demand for more public services. The "responsive elements" in the growth of public spending are the factors that affect demand: income, relative prices, and population. How much growth can be explained by these responsive elements?

The Income Elasticity of Demand for Government Goods and Services

For most goods, an increase in income, other things being equal, will lead to an increase in demand. The income elasticity of demand is a measure of how responsive demand is to an increase in income. It is defined as the percentage change in quantity demanded divided by the percentage change in income. If the income elasticity of demand is 0.5, for example, the quantity demanded increases by 5 percent when income rises by 10 percent.

In absolute terms, the growth in real income will explain part of the growth in real government spending. This simply means that the income elasticity of demand for public services is positive. Growth in real income will explain the *relative* growth of the public sector, however, only if the demand for public services is more responsive to increases in income than

[4]"Total wage and salary workers" excludes proprietors, self-employed persons, domestic servants, and unpaid family workers, as well as persons in the armed forces.