ISSN 0538-8759
ISBN 1-55775-497-7

The term “country,” as used in this pamphlet, does not in all cases refer to a territorial entity that is a state as understood by international law and practice; the term also covers some territorial entities that are not states, but for which statistical data are maintained and provided internationally on a separate and independent basis.

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Preface

Public expenditure productivity is critically important for fiscal adjustment and sustainability, particularly when resources for supporting public services are limited. Focusing exclusively on the revenue side is not advisable, as increasing the productivity of public expenditures can provide a viable option for reducing the deficit or expanding critical expenditure programs.

The purpose of this pamphlet is to analyze the issue of public expenditure productivity and present some pragmatic suggestions for its improvement. An earlier version was discussed in a seminar by the IMF's Executive Board.

The pamphlet is the product of a collaborative effort of the staff of the Fiscal A ffairs Department's Expenditure Policy Division. The authors would like to thank Zuliu Hu, Edgardo Ruggiero, and Caroline Van Rijckeghem for extensive discussions and comments, and Helga Hessenius for assisting in the final revision of the pamphlet. Tarja Papavassiliou provided statistical and computational assistance. Other colleagues in the Fiscal Affairs Department, other IMF departments, and the World Bank provided many valuable comments on, and contributions to, earlier drafts. The pamphlet was edited by Thomas Walter of the External Relations Department. The authors bear the sole responsibility for any remaining errors.

Finally, the authors are grateful to Vito Tanzi, Director of the Fiscal Affairs Department, for guidance and comments on earlier drafts of this pamphlet.

Unproductive Public Expenditures: A Pragmatic Approach to Policy Analysis

Introduction

This pamphlet discusses how economic policymakers may approach the question of the productivity of public expenditure. The discussion is aimed at those in charge of fiscal and budgetary policies. These policymakers rely on sectoral experts for detailed analysis, but they should be in a position to raise relevant questions and receive appropriate answers about the key features in the design and execution of sectoral programs. The pamphlet argues that improving public expenditure productivity is not only a microeconomic but also a macroeconomic issue. Therefore, macroeconomic policymakers have a major role to play in improving the productivity of public expenditure.

The first section of the pamphlet discusses why increasing public expenditure productivity is important in fiscal adjustment. The following section provides a framework in which public expenditure productivity and unproductive expenditures can be defined and analyzed. In the next section, a practical approach for analyzing public expenditure productivity, as well as illustrative analyses for several major, broadly defined expenditure components, is offered. The following section surveys the literature linking public expenditures and economic growth. Finally, conclusions and some pragmatic suggestions regarding the analysis of public expenditure productivity are presented. The appendix provides a summary of the composition of public expenditure for high-income, middle-income, and low-income countries, keeping in view the limitations of such cross-country comparisons for the assessment of expenditure priorities.

Unproductive Expenditures and Their Economic Implications

This section presents the background for the present discussion and an analytical framework for defining public expenditure productivity and unproductive expenditures. It also discusses conceptual and practical

difficulties involved in defining and assessing public expenditure productivity and in identifying unproductive programs.[1]

Background

In all economies, an efficient and sustainable reduction in the fiscal deficit requires a sound mix of revenue and expenditure policies. A government facing the need to reduce speedily the fiscal deficit may at times find it difficult or impossible to raise the level of revenue in the short run. Increasing the productivity of public programs can provide a viable option that will release resources to reduce the deficit or to expand other critical public programs. Moreover, the government may want to reduce the size of the public sector and the level of public expenditure over time because the public sector is engaged in activities that can be carried out more efficiently by the private sector. Even without a major fiscal imbalance or a large public sector, some categories of public expenditure may be so inefficient that improving efficiency could release resources to expand other critical public programs or to reduce the deficit.

Tax reform, even if it is efficient, will have diminished benefits or can even be counterproductive if it is not accompanied by an equally efficient reform of public expenditures, especially if any additional revenue goes to inefficient public expenditure programs.

In many industrial and transition economies, the role of the public sector is extensive, and reducing its role will lower public expenditure and help reduce the fiscal deficit. Particularly relevant in this context are expenditures on social security, producer subsidies, and defense.

For a variety of external and domestic reasons, many developing and transition economies have experienced a rapid decline in revenue, which, in turn, has created a need to reduce their fiscal deficits. Such reductions, of course, can be achieved by either raising revenues, reducing expenditures, or a combination of the two. Experience suggests that large increases in the ratio of tax revenue to GDP may not be feasible in the short run, especially when they must satisfy efficiency and equity criteria. The exceptions have been those countries where a drastic acceleration of the inflation rate or an excessive overvaluation of the exchange rate has sharply reduced tax revenue. In these cases (Argentina, Bolivia, Peru, and Uganda, for example), reducing the rate of inflation or adjusting the exchange rate can lead, and has led, to large increases in tax revenue in relation to GDP.

The fact that tax reform alone is unlikely to bring about the needed short-run adjustment in the fiscal accounts often shifts the focus to the expenditure side of the budget. Attempts to reduce public spending have been common. Unfortunately, experience has shown that expenditure cuts have often followed criteria that from an efficiency or equity point of view have left much to be desired. For example, some countries carried out across-the-board reductions in spending without regard to the relative importance, at the margin, of various expenditures. Others chose the politically easier path of reducing expenditures on operations and maintenance or on capital spending, or the technically simple step of reducing real wages by keeping nominal wages unchanged when it was politically feasible.

Often these adjustments were neither desirable nor sustainable. A cut in investment spending on productive new capital projects or a reduction in outlays for maintaining the existing capital stock may reduce growth prospects for the economy. Sharp cuts in real wages in the public sector can lower the productivity of the public sector work force and are unlikely to be sustainable. Well-designed policies of public expenditure reduction have proven difficult to plan and execute, as they require diff i c u l t technical work, political compromises, and the adoption of complementary measures.

Regardless of these difficulties, however, governments inevitably have to—and do—plan and execute expenditure reductions. The goal should be to achieve fiscal adjustment in the most efficient and sustainable way possible, with due consideration given to maintaining essential public services, protecting growth prospects, and achieving an equitable distribution of income.

Public Expenditure Productivity and Unproductive Expenditures

Analytical framework

The notion of public expenditure productivity is predicated on the interpretation of public sector activities as production processes. The public sector employs human and other resources and accumulates capital stock to produce public goods, such as "economic stabilization," "judicial services," "national defense," "protection of the poor," and, at times, even private goods.

The distinction between public production and public provision is important. The government may *provide* a public good, but may let the

private sector *produce* it. For example, the government may decide to contract out the running of prisons to the private sector, or it may buy military equipment from the private sector.

Whether the public sector is a producer in a narrow sense or a provider, it uses resources for production or procurement and for the administration of benefits. The public sector should use these resources efficiently to fulfill its objectives. Analogous to labor or capital productivity, public expenditure productivity may be defined by comparing outputs produced, or objectives achieved, with given expenditures. The following two conditions are essential for public expenditure programs to be efficient or "productive."

LOWEST POSSIBLE COST. Public sector operations must be cost-effective. Individual public expenditure programs or projects should be designed and implemented to provide given levels of outputs or achieve specific objectives at minimum cost. For this condition to be satisfied, the public sector must use human and other resources fully and effectively; that is, it must not waste any resources. Moreover, given their prices, inputs should be mixed optimally. The conditions for cost-effectiveness may differ, however, between public production in a narrow sense and public provision. In the latter case, if public provision is based on purchases of goods produced by private producers, the government may not have to be excessively concerned about the efficiency of production if the private sector operates competitively, although it has to be concerned about the efficiency of procurement.

APPROPRIATE MIX OF OUTPUTS AND SUSTAINABLE LEVELS OF AGGREGATE EXPENDITURE. For public expenditures to be productive in the aggregate, the mix of public sector outputs should be optimal.[2] The government should not produce too much of one good and too little of another. If the benefits of public sector outputs could be quantitatively measured and compared with one another, an appropriate mix of outputs for a given level of aggregate public expenditure would be achieved by equalizing at the margin the benefits of each program. This would yield the highest aggregate benefit.

The level of aggregate public expenditure should be consistent with a sustainable macroeconomic framework. In the simple case of one public good, the optimum provision of that good is achieved when the marginal social benefit derived from the good is equal to the marginal social cost of

providing it. If there is more than one good, the marginal social benefit derived from total expenditure should equal the marginal social cost of such expenditure. As defined by Samuelson (1955), the social benefit of a public good is the sum of the benefits derived by the members of society, as measured by each individual's willingness to pay. These benefits include not only those of specific public services provided by these individual programs but also the overall policy objectives—for example, macroeconomic adjustment and poverty reduction—at which the mix of public expenditure programs are aimed. The social cost of providing the public good should include not only the cost of producing the good but also the administrative cost of its provision and any costs arising from financing the expenditure, including taxation and borrowing.

Unproductive expenditures and their underlying factors

Public expenditure productivity provides a basis for conceptualizing "unproductive" expenditures. For a single program, unproductive expenditure may be defined as the difference between the actual public spending on the program and the reduced spending that would yield the same social benefit with maximum cost-effectiveness. Moreover, if a change in the mix of cost-effective public sector programs were to reduce aggregate public expenditure without reducing the aggregate benefit, the difference between the two aggregate expenditure levels that yields the same aggregate benefit could also be considered unproductive expenditure.

It should be noted that in this sense unproductive expenditures are not necessarily measurable. As discussed below, there are many difficulties involved in assessing and measuring unproductive expenditures. In many cases, it is not possible to distinguish between "productive programs" and "unproductive programs"; public expenditure programs have varying degrees of productivity. Alternative options for mixing public expenditure programs imply different degrees of aggregate expenditure productivity. Moreover, even if all programs were cost-effective and appropriately mixed, the aggregate expenditure level might not be sustainable. In this case, the productivity of public expenditure programs cannot be determined without considering the adverse macroeconomic implications (for example, higher domestic inflation or a larger external debt burden) of aggregate expenditure.

Nevertheless, unproductive expenditures, as defined in this pamphlet, can provide a useful basis for assessing and improving policies. The

definition developed here provides a basis for discussing reform options for public sector programs. For example, a generalized food subsidy established to protect the poor would be made more productive by reforming it into a targeted one. Changing the mix of health programs from curative to preventive might increase expenditure productivity by improving health status without increasing expenditures. Finally, cost-effective expenditure programs might have to be eliminated because the benefits that they generate are lower than their costs, including the negative macroeconomic implications of these outlays.

Unproductive expenditures arise because of many factors, including uncertainties, the lack of a well-trained civil service, inadequate checks and balances in the political and budgetary process, and corruption. Government expenditures often grow faster than revenues because of asymmetries in the political costs and benefits associated with taxing and spending.[3]

Generalized subsidies that benefit a broad populace, including the middle class, illustrate the political factors that underlie the growth of unproductive expenditures. These subsidies, while enhancing political support and election prospects, are an inefficient means of increasing the consumption standards of the poor. Replacing these subsidies with benefits targeted to the poor will improve the efficiency of expenditures, provided that these benefits do not have a strong adverse effect on work incentives by increasing the implicit marginal tax rates for low-income workers. Expenditures on "white elephant" projects (prestigious projects that do not serve useful economic or social objectives), subsidies through marketing boards or investment incentives, and transfers to loss-making public enterprises often reward important political groups or benefit particular regions at the expense of the larger populace (Krueger (1990)). Lobbying to obtain these benefits increases further the costs of such public expenditures (Becker (1983)).

The problems involved in identifying the inflation tax or debt-service burden associated with certain government expenditures make it more difficult for voters to hold policymakers responsible for their decisions. Long-term government borrowing shifts the burden of making politically unpopular decisions to increase taxes to future generations of policymakers. At the same time, there is a "property rights" problem associated with prudent and purely productivity-oriented expenditure policies: the benefits of such policies may only accrue in the long run, and future generations of policymakers will enjoy the political benefits (Lee (1987)).

Conceptual and practical difficulties

While public expenditure productivity is an apparently straightforward concept, there are many difficulties involved in measuring public expenditure productivity and unproductive expenditures.

It is difficult to measure or value public sector outputs, particularly for public goods, such as national security or criminal justice. Many public sector outputs are neither marketable nor offered competitively; they are neither tangible nor divisible. It is often not easy even to value the inputs used. The public sector is not profit oriented; it often employs scarce productive factors without offering competitive prices that reflect opportunity costs (as, for example, with administered producer prices and minimal wages for military draftees), and it finances its operations largely through taxation—a nonmarket instrument.

Assessment is further complicated when programs serve more than one objective (for example, a highway serving both economic and defense objectives) or have economic implications not directly related to their primary objectives. Public programs can have important positive externalities on private sector investment, employment, and production. As a result, deciding on the mix of public sector outputs is always difficult and may require value judgments. For example, choosing between a military and a development program requires a policymaker to weigh the relative merits of national security and economic development. Assessment may also be complicated because the demand for public services and various risks are not correctly anticipated. Underutilized public facilities can emerge. Some public programs, such as government loan guarantees, may have only small initial budgetary costs but incur large contingent liabilities.

Moreover, available public expenditure data often do not adequately cover public sector institutions, such as local governments and public enterprises. For many countries, disaggregated expenditure data (in particular, by functional classification) are either unavailable or not compiled on a timely basis.[4] There are difficulties and ambiguities involved in classifying expenditures functionally. Lack of timely and complete data hampers efforts to monitor and improve the efficiency of specific programs. In addition, inefficient programs often emerge ex post as a result of inefficient implementation or the failure of complementary programs.

Implications of Unproductive Expenditures

The economic costs of unproductive public expenditures can be far-reaching. Inefficient public programs imply that the overall level of expenditure is higher than is necessary to fulfill the objectives of these programs; this, in turn, implies a larger deficit or higher taxation than when these programs are efficient. Reducing expenditures without improving expenditure productivity implies scaling down public sector output. Maintaining high taxation limits the resources available for the private sector. The result can be smaller public or private investment, lower economic growth, fewer resources available for use elsewhere, and a greater debt burden in the future.[5] By reducing or eliminating unproductive expenditures, a country can either reduce the fiscal deficit without reducing the provision of essential public programs, reduce taxes, or expand the provision of other essential public programs.

Certain public programs have far greater costs than the budgetary resources that they command. Consumer subsidies reduce the efficiency of resource use by encouraging wasteful consumption of goods that are subsidized or by discouraging their domestic production (if financed by taxes on producers) and thus create an excessive import demand, for which foreign exchange must be allocated.

Some expenditures can have important external effects on resource allocation even beyond their national boundaries. Subsidization of exports lowers their world market price and thereby reduces foreign exchange earnings and welfare in other exporting countries.[6] An increase in producer subsidies for tradable goods in a country may trigger retaliatory increases in similar subsidies or the erection of trade barriers in competitor countries. An increase in military expenditures in a country may cause military buildups in rival countries. Therefore, reductions in these expenditures in a country can have virtuous effects on global resource allocation.[7]

Reducing unproductive public expenditures worldwide would yield a large increase in available resources. Based on the assumption that aggregate world GDP was some $30 trillion as of the early 1990s, with public expenditures accounting for about 30 percent of GDP, the immediate and direct effect of a 1 percent increase in public expenditure productivity would have been an increase of $90 billion in resources available for additional public investment, social programs, or deficit reduction.

Public Expenditure Productivity: Illustrative Analyses

Increasing public expenditure productivity can yield large returns in terms of budgetary savings, reduced negative externalities, and increased direct benefits. Although difficult, it is possible for governments to take steps to this end. Governments can improve the data base and use more systematic—but pragmatic—analysis to increase public expenditure productivity.

This section discusses a practical approach for assessing public expenditure productivity and illustrates the analysis of public expenditure productivity for major expenditure categories. The list of expenditure components is not meant to be exhaustive but to illustrate the range of issues that might arise. With each example, plausible primary objectives of public programs are identified; possible criteria to assess the feasibility of achieving the objectives are suggested; the feasibility of alternative ways to achieve the objectives is assessed; and finally, possible ways to identify inefficient programs are indicated.

The discussion is intended to illustrate a framework that can be helpful for assessing public expenditure policy within each country's process of choosing expenditure priorities.[8]

Overview of an Approach

Cost-effectiveness

Economic policymakers can and should examine the cost-effectiveness of major programs or projects. At times, glaring inefficiencies, such as ghost employees or vastly underutilized infrastructure requiring large operational costs, can be easily recognized without elaborate analysis.

Unproductive expenditures may emerge because of the ambiguity and multiplicity of outputs and objectives. It is necessary, therefore, to identify each program's primary—separate from its less important—outputs or objectives. For example, the primary objective of college education programs is the provision of higher education rather than providing a sort of employment for college-age youths. The primary objective of military research is improving national security rather than discovering new technologies for industrial use. Secondary objectives may be important, but aiming at the cost-effective fulfillment of the primary objective may yield more than enough savings to achieve secondary objectives in a similar manner.

The appropriate mix of inputs is a technical as well as an economic issue. The analysis of this issue often involves key technical relationships. For instance, a shortage of medicine or nurses relative to doctors may imply inefficient health expenditures. A shortage of textbooks relative to teachers is an indication of ineffective education programs. Generals without adequate numbers of enlisted soldiers are an indication of ineffective military expenditures; and roads without adequate provision of operations and maintenance are an indication of inefficient infrastructure expenditure.

The performance of the private sector in providing certain goods and services can suggest a useful benchmark for assessing the efficiency of public expenditures. Public programs that could be implemented more efficiently by the private sector in a competitive environment, such as the production, processing, and distribution of many consumer goods currently controlled by the state in the former Soviet Union countries and some Middle Eastern countries, would be obvious candidates for privatization.[9]

In assessing the efficiency of expenditures, it is often useful to analyze the empirical data comparing main output indicators or their proxies with certain input or cost indicators. Educational attainment indicators, such as literacy rates, standardized test scores of students, and school enrollment ratios, can be compared with relevant measures of expenditure on education. Studies analyzing these data demonstrate that certain inputs (for example, teacher experience, textbooks, homework, and length of school year) have a positive effect on student achievement; however, these studies have not been able to identify the relative productivity of different inputs.[10] High teacher-student ratios, in the absence of high educational attainment, can also indicate inefficiency.[11] Similarly, the infant mortality rate or life expectancy may be compared with health expenditures, and linkages between health indicators and certain types of health outlays can be assessed. For example, utilization of community and family-planning clinics appears to promote infant health.[12] Indicators are also compiled in some countries for such output indicators as military capabilities or crime prevention, which can be compared with expenditures on defense or public order to assess the productivity of these outlays. Gore (1993) describes the efforts of a U.S. city to make public sector objectives transparent and to quantify public sector outputs.

Prices of inputs should be correctly valued. When input prices are administratively controlled, proper shadow prices reflecting opportunity

costs should be used. Government guarantees, including those for lending, borrowing, and exchange rates, should also be priced on an economically sound basis to avoid distorting the pattern of private sector risk taking and placing an undue burden on future budgets.[13]

Appropriate mix of outputs and level of aggregate expenditure

Cost-benefit analysis often provides a basis on which policymakers can determine the mix of outputs or benefits. For those expenditures for which benefits can be quantified and compared with one another, reallocating expenditures from those programs yielding smaller additional benefits to those yielding larger additional benefits will increase total benefits. In designing an investment program, it is important to rank possible investment projects in accordance with their discounted net present values and to choose the highest-yielding projects. At times, however, even where adequate data are available, appropriate analytical tools—for example, social cost-benefit analysis—are not systematically applied. In other circumstances, available information is not collected or made use of in formulating policy advice.[14]

In some cases, an inappropriate output mix can be identified (for example, high-technology urban hospitals in the absence of rural clinics, or high levels of expenditure on university education in the presence of increasing illiteracy rates). In many cases, however, the benefits associated with various expenditures can be neither quantified nor compared. Value judgments are unavoidable, and the domestic political process inevitably plays a paramount role.

To be successful, the political process that determines the mix of public sector outputs should be supported by the economic analysis of policy options and their implications. Aclear assessment of opportunity costs is essential. For example, in determining the appropriate size of military expenditure, it is essential to analyze not only the level of benefits that such expenditure brings about but also possible trade-offs of benefits resulting from reallocating a certain amount of military expenditure to a development project, a social program, or deficit reduction.

An analysis of the macroeconomic and structural implications of expenditure policies is necessary to assess trade-offs properly. In particul a r, it is useful to assess the short- and longer-run effects of public expenditure programs on aggregate demand, resource allocation, and external balances, because the analysis of expenditure programs for each

sector does not usually take into account the implications of the overall resource envelope under which a country is likely to operate over the medium term. It is difficult for a sector-oriented analysis to assess the "appropriateness" of a project in isolation—even if its efficiency is assured.

The aggregate resource constraint that a country faces may require it to reduce the level of public expenditure when government revenue falls or when available financing dwindles or becomes more expensive. In this case, efficient and sustainable expenditure adjustment will likely require differential reductions in various expenditure categories. If, for example, a fall in revenue occurs that was not fully anticipated at the time that a public expenditure review was made, the desired expenditure pattern indicated in that review may need to be revised. Cutting obvious waste should be the first step in reducing expenditure. Public expenditure cuts are often more sustainable when public sector employment is reduced than when pay is compressed (Tanzi (1990)). In Tanzania, for example, a decline in the average purchasing power of civil service salaries to one fifth of their 1970 level by the end-1980s was reported to have resulted in a serious fall in public service morale, motivation, and discipline. This, in turn, led to high levels of absenteeism, frustration, and corruption, compromising the quality of public services (World Bank (1994b)). To be sustainable, expenditure cuts need to emphasize the protection of key public investment programs, in particular, those aimed at promoting external adjustment and growth, as well as social expenditures targeted to the poor. In fact, when available resources fall, the targeting may have to become more pointed, that is, the definition of the target group or the beneficiaries of government social programs may have to become more restrictive.

Output mix, expenditure composition, and value judgments

Because of the difficulties involved in valuing public sector outputs and measuring the efficiency of their production, the empirical analysis of public expenditures often assumes that changes in the composition of functional expenditure suggest changes in the public sector output mix. Moreover, there is a tendency to characterize changes in the composition of expenditure as solely a normative issue.

This tendency is detrimental to the analysis of public expenditure productivity.A change in expenditure composition is not synonymous with a

change in the output mix if an increase in the productivity of a public program brings about a reduction in cost, but not output. In this case, a change in expenditure composition is an efficiency issue that does not necessarily involve value judgments.

Institutional and political considerations

In some cases, institutional arrangements can point, indirectly, to inefficient programs—for example, when budgetary control, the procurement system, project management, or auditing procedures are deficient.[15] Also, state enterprises often can exercise considerable influence on budgetary allocations for enterprise transfers; many transition economies maintain budgetary transfers or subsidized credit to loss-making enterprises. These shortcomings can facilitate the emergence of unproductive expenditures, but their removal may be far from easy for political reasons. Frequently, powerful vested interest groups profit from such expenditures and lobby strongly against their elimination.[16] It is therefore much more difficult politically (although more efficient economically) to reduce overemployment in the public sector than to reduce spending on textbooks or hospital supplies. A careful identification of the winners and losers of an expenditure reallocation, coupled with the implementation of a well-targeted compensation scheme, can significantly enhance the political feasibility of reducing unproductive expenditures.

The expenditures of central banks (through their quasi-fiscal activities) or extrabudgetary funds can be a source of unproductive outlays that is often less than transparent to policymakers. Such expenditures can take the form of inefficient and inequitable social security programs, the allocation of below-market credit to certain enterprises, or the provision of foreign exchange at below-market rates to certain users, which generate not only huge implicit subsidies but also, in some instances, large financial losses for central banks. Every effort should be made to make these expenditures and activities transparent, so that the costs and benefits of these activities can be readily assessed.

In a democratic political process with institutions promoting good governance, a well-informed public may help set appropriate public expenditure priorities by fostering public participation in the assessment of alternative goals and the exploration of cost-effective strategies to achieve established goals, as well as by maintaining the accountability of the government.

Importance of data

Proper analysis, policy design, and policy implementation require extensive data. Proper expenditure data should include data on detailed functional expenditure components, including the administration of justice, national defense, and major economic and social services, such as agricultural services, primary education, and primary health care, with each of these components broken down to show their major economic components, such as wages, other current expenditures, and capital outlays. These data should cover all public entities, including central and local governments and other public sector institutions, and should be collected in a timely fashion.

Analyses of Economic Components

Public sector employment and wages

During 1983–90, the central government wage bill in a sample of high-income, middle-income, and low-income countries accounted for, on average, 3.7 percent, 5.5 percent, and 2.5 percent of GDP, respectively, and 11.9 percent, 21.2 percent, and 11.5 percent of central government expenditure (see Appendix, Table A 1) .[17] The policy implications of public sector employment and wages depend upon the particular circumstances of individual countries; however, several general issues may be considered.

Public employment represents only one input into the production of public goods and services. While in some cases a high degree of capital intensity in the face of abundant labor and high unemployment may be a sign of inefficiency, in others high public sector employment may be indicative of overstaffing. Maintaining a large number of public sector employees on the grounds of social protection can result in a low (or even negative) marginal product of labor for a large portion of the public sector work force. In these cases, it may be more efficient to utilize the least-cost input mix at appropriate input prices and implement a separate social protection program.[18] In some circumstances, employment can become relatively excessive because of increasing shortages of other inputs (for example, medicine or textbooks), resulting in low labor productivity in the public sector. Additional public sector employment will not necessarily substitute for other inputs—it can, for instance, imply additional expenses for office space, vehicles, and support staff. Moreover, it is often easy to underestimate labor costs when wages are supplemented by in-kind enti-

tlements, such as travel and housing allowances and privileged access to free or subsidized goods or services.

The use of a blanket prescription to reduce expenditures, such as an across-the-board reduction in public sector wage rates, may not always be appropriate. It is also often unproductive to maintain, for the sake of equity, uncompetitively low public sector wages, particularly for skilled managerial and professional staff, and inadequate wage differentials in the public sector. The results could be absenteeism, low morale, corruption, or the inability to attract qualified personnel, thus contributing to an inefficient provision of public goods. In Peru, for example, two major factors have contributed to the decline in the quality of education—a fall in real salaries of teachers and a reduction in the salary gap between professional teachers (those with a degree in education) and nonprofessional teachers to only about 20 percent. As a result of these factors, the percentage of professional teachers in public schools fell from 80 percent in 1980 to only 49 percent in 1990 (World Bank (1994e)). However, it should also be noted that wage differentials, in the absence of good governance, can be a strong incentive for nepotism and thus inefficiency. Reform in this area could include cuts in unproductive employment, coupled with a rise in real wages for the remaining productive employees.

The experience in Ghana provides a good example of the benefits of streamlining public sector employment and improving the competitiveness of compensation while increasing public sector productivity. The 1970s and early 1980s in Ghana were characterized by the rapid growth of public employment and dramatic declines in productivity and real wages; by 1983, real monthly earnings were less than 11 percent of their 1975 level. The result was an overstaffed, poorly trained, and unmotivated civil service. Civil service reform, in the context of a program supported by the IMF's enhanced structural adjustment facility and a World Bank structural adjustment loan, was aimed at reducing overall staff levels while improving the competitiveness of civil service pay, particularly at higher levels, and providing training and incentives for increased productivity (see Kapur and others (1991) and Mackenzie and Schiff (1991)).[19] While reforms such as these may not greatly reduce a government's wage bill, they can lead to efficiency gains and productivity spillovers. In fact, public sector retrenchment with severance pay and other social safety nets can increase public expenditures in the short run, while reducing public expenditure in the long run.

Subsidies and transfers

Central government subsidies and transfers include those to local governments, public and private enterprises, and households. Social security payments and producer and consumer subsidies, in particular for high-income countries, account for the bulk of the subsidies and transfers. During 1983–90, central government subsidy and transfer payments accounted for a large share of GDP and total government expenditure—17.1 percent, 7.2 percent, and 5.5 percent of GDP; and 54.5 percent, 27.1 percent, and 25.2 percent of total expenditure, respectively, in a sample of high-income, middle-income, and low-income countries (Appendix, Table A1).[20] Subsidies and transfers are prevalent in all countries.

Subsidies and transfers are justified on a number of grounds: to offset market failure, exploit economies of scale in production, redistribute income, and alleviate poverty. In many countries, however, subsidies and transfers do not achieve their objectives efficiently. Only a small part of the subsidies and transfers aimed at alleviating poverty actually benefit the poor. For some transfers, this is inevitable—pensions, for example, are usually designed to benefit those who have joined the scheme regardless of their preretirement incomes. To a significant degree, however, there is unintended waste. Producer subsidies on tradable goods not only raise questions about both their efficiency and equity implications but also have negative international externalities, as they might induce retaliatory actions by competitor countries. In many cases, the analysis of subsidies is difficult because their provision is not transparent; subsidies are sometimes financed by the implicit taxation of producers (for example, through controlled producer prices) or by the banking system (for example, through low-interest-rate loans to producers).

In the case of generalized food subsidies, the stated primary objective is often to enhance the nutritional status of the poor. Therefore, it is not unreasonable to expect that food subsidies would be targeted to the poorest segment of the population, for example, the poorest 20 percent. A typical open-ended general subsidy, however, tends to provide greater absolute benefits to the rich than to the poor, as the former usually consume more than the latter do for most goods.

Moreover, low food prices encourage wasteful consumption (for example, the use of food to feed livestock). Where general subsidies are supported by low producer prices in order to minimize budgetary outlays,

these prices discourage domestic production, thus adversely affecting the external balance. In several countries in the Middle East and North Africa, for example, the incidence of food subsidies to the poorest quintile is as low as 3 percent of total food subsidy expenditure, and it rarely exceeds 20 percent. A study of the incidence of bread, mutton, rice, and sugar subsidies in Jordan suggests that in 1987 the ratio of the benefits for the richest quintile to those for the poorest ranged between 1.5 and 17.4, while the share of total benefits going to the poorest quintile was between 3 percent and 16 percent.The Jordanian authorities have been making efforts to improve the efficiency of food subsidies and have successfully introduced a number of measures to improve targeting (Ahmad (1991)).

Subsidy reforms should go hand in hand with pricing reforms. Both producer and consumer prices should be liberalized. Providing higher producer prices while maintaining low consumer prices may lead to a positive producer response, but it would imply a larger budgetary expenditure on consumer subsidies.

Enhanced targeting would allow the government to support the poor at the same level at lower cost, thus freeing resources for other programs for the poor or for other public or private uses. Unfortunately, attempting to reform subsidies through excessive targeting may be counterproductive in the short run in many countries—not only because such targeting is not feasible administratively but also because reducing or eliminating the benefits for middle-income groups may elicit strong political opposition to the subsidy reform and even to overall economic reform.

It may be possible to improve benefit incidence in a number of more limited ways. For example, in the absence of sufficient administrative capacity for means testing, countries could limit commodity subsidies by restricting the level of subsidized consumption of essential commodities to particular groups of households regardless of their income, such as pensioners, unemployed workers, and families with children. Administratively, such a system could be designed to operate without interfering significantly with a competitive market for the relevant commodity. A key question is whether such systems are feasible at a reasonable cost. While attractive as a transitory measure when relative price changes are large, these arrangements entail significant administrative costs. Therefore, it is important to phase them out as the transition to market arrangements proceeds and as permanent social protection mechanisms, including pensions,

child allowances, unemployment insurance, and local social assistance, are introduced.

Another attractive option for protecting low-income groups at minimal administrative cost is public works programs, in which low wages act as a self-targeting mechanism. In any event, there are often alternatives that protect the poor at a lower cost than generalized subsidies and are consistent with sustainable economic reform.

Political opposition to targeting may be reduced by designing a reform program that enlists broad public support by spreading the burden of adjustment widely while protecting the poor, rather than requiring any one social group, even if it is a high-income group, to bear a large burden of adjustment. Recent experiences suggest that the elimination of severe shortages following the liberalization of prices mitigates the adverse effects of higher prices. Again, the immediate removal of all subsidies may prove counterproductive in many environments, and it is important to be aware of alternative adjustment patterns and social safety nets that might be essential to underpin economic reform efforts.

Producer subsidies for competing countries' traded goods can increase the aggregate amount of such subsidies globally above the level that would prevail in the absence of trade. In this case, as in the case of military expenditure, a coordinated reduction in subsidies may result in no loss of global welfare, and even in gains in efficiency.

In many countries, there is a need for permanent insurance-based social security programs, including pensions and unemployment benefits. When such programs are introduced, substantial surpluses are often generated in early years. This promotes the proliferation of benefits and the "backdoor" financing of the budget deficit by requiring the funds to hold government paper at below-market prices, as well as other forms of inefficient investment. However, growing expenditures on the contingent liabilities have to be met in the future—for example, in connection with the aging of the population. As the value of reserves has in many countries dwindled and vanished, there is often a substantial call on budgetary resources (for example, in several Latin American countries).

Public investment

In many developing countries, public investment accounts for a large proportion of total expenditure, reflecting the role of the government in providing infrastructure—for example, in transportation, communica-

tions, and energy. During 1983–90, central government capital outlays accounted for 1.8 percent, 3.8 percent, and 4.3 percent of GDP, respectively, for a sample of high-income, middle-income, and low-income countries, and for 5.7 percent, 14.5 percent, and 19.9 percent of total expenditure, respectively, for the same three country groups (Appendix, Table A1).[21] To the extent that such projects increase the supply of public goods, the involvement of the government may be worthwhile. However, some public investment is commercial in nature and may directly compete with, or crowd out, more efficient private sector activity. Other investments by the government may provide a low social rate of return.

In evaluating investment activities, governments should follow sound economic analysis, including, where feasible, the principles of cost-benefit analysis, and undertake only those projects with a positive net social present value. The experience of Madagascar illustrates the possibility of using economic analysis to increase the efficiency of public investment. A three-year public investment program stressing an improvement in infrastructure and overall project quality was put in place in 1989. Atask force was established to monitor public investment systematically, and a trigger mechanism was put in place to reduce the public investment program in midstream should expenditures lag behind expectations. This mechanism led to a downscaling of the original program after six months, with the core projects maintained (Miranda (1991)).

Cost-benefit analysis may also be useful in evaluating public expenditure policy more generally.[22] However, using cost-benefit analysis will often raise complex measurement and valuation problems. Owing to these difficulties, it is perhaps wise to employ cost-benefit analysis systematically for selected public programs and for the broad expenditure composition only as a framework for informed debate on policy alternatives, rather than as a mechanical tool for providing precise answers.

Public investment is an area in which, even without careful cost-benefit analyses, one can find extreme examples of white elephants. Moreover, in countries where aggregate public investment does not seem to contribute significantly to economic growth, inefficiency may be widespread.[23] While public investment is often undertaken to meet legitimate objectives, such as the provision of infrastructure, it is sometimes implemented in costly and inefficient ways. Other seemingly viable investments may turn out to be inefficient, owing to poor coordination between projects (for example, a road leading to an industrial complex that is never

developed). In some other cases, the productivity of existing public capital deteriorates either because of insufficient maintenance or because qualified manpower does not exist for public operations.[24] The allocation for recurrent expenditures in the 1993/94 road budget for Ethiopia, for example, was less than half of what would be needed for regular maintenance and rehabilitation. Partly as a result of poor maintenance in the past, approximately 65 percent of the road network in Ethiopia can be classified as poor, and only 10 percent as good (World Bank (1994d)).

Analyses of Functional Components

Nutrition, health, and education

The resource implications of nutrition, health, and education programs are large. During 1983–90, central government expenditures on health and education accounted for 3.3 percent and 1.7 percent of GDP, respectively, for a sample of 80 countries (Appendix, Table A1). Combined outlays of the general government on health and education for a smaller number of sample countries were almost 10 percent of GDP (Appendix, Table A2).

It is conventional wisdom that public expenditure on nutrition, health, and education is relatively productive not only because of its direct impact on well-being but also because of its investment aspect, that is, its beneficial effect on the development of human capital. These outlays provide direct benefits to individual recipients and may provide indirect benefits to society as a whole.[25] The efficiency of government nutrition, health, and education programs, which is a universally critical issue, varies widely across countries. From an economic perspective, a primary objective of these programs is to enhance the productive capacity of human resources. Low-income countries, in particular, have a large need for expenditures on health.[26] The efficiency of these programs requires a proper mix, taking into account the complementarity of, as well as substitutability between, nutrition, health, and education programs. For example, enhanced nutrition and health can complement education programs by ensuring that students are healthy enough to attend class. At the same time, enhanced hygienic education can to some extent reduce the need for nutrition and health programs.[27]

The intrasectoral program mix should also be examined. In general, costly university education programs in the presence of very low primary

and secondary school enrollment ratios are relatively unproductive. While such a situation may indicate that a reallocation of education expenditures is in order, it should be recognized that the expansion of primary or secondary education will increase the demand for some of the products of university education, such as qualified teachers. A recent World Bank study of Tanzania noted that the opportunity cost of sending 1 student to university was not sending 238 students to primary school. Areallocation of expenditures from university education to primary education could therefore yield vastly increased benefits and prevent a further increase in the illiteracy rate. According to official estimates, illiteracy rates in Tanzania increased from 10 percent in 1986 to 16 percent in 1992 (World Bank (1994b)).

In some cases, user charges, judiciously applied, can improve the efficiency of public programs. The recent experience of Kenya illustrates this point. Higher education has been highly subsidized through interest-free loans and low tuition and charges. As a result, the higher-education sector has deprived other levels of education of needed funds. Beginning in 1991/92, in the context of a program supported by the IMF's enhanced structural adjustment facility, tuition and fees were raised and student loans were reduced; in addition, enrollment was to be limited to 10,000, compared with 21,500 in the previous year, and was to increase by no more than 3 percent a year. The Government sought to mitigate the impact on the poor of the higher user charges by granting targeted scholarships and loans.

Similarly, research has shown that the rate of return on preventive health care is particularly high and that the costs incurred per patient are typically low. By definition, per patient costs of large hospitals are higher than per patient costs for primary health care. This points to the need to assess carefully the needs of preventive health care relative to available curative facilities, and the mix of both types of facilities.[28]

Several indicators can provide useful clues of inefficiency in social programs. For example, imbalances between categories of current expenditures, such as a declining share for school books or operations and maintenance relative to historical or international averages, may indicate inefficiencies. In Sierra Leone, for instance, the eightfold reduction in recurrent health expenditures per capita in real terms between 1980/81 and 1992/93–-causing a near breakdown of essential government health services—was cited as an indicator of inefficient expenditure allocations (see

World Bank (1994a)). In Sierra Leone, during the 1980s, the imbalance between expenditures on wages and salaries and other goods and services resulted in a lack of supplies for clinics, and over 80 percent of the education sector budget for recurrent expenditures was allocated for staff salaries and allowances, leaving hardly anything for textbooks or other instructional materials (World Bank (1994a)). In Ethiopia, many health care facilities would have had no drugs to dispense in 1991/92, in the absence of support from the international community, and 98.9 percent of the budget for primary education was allocated for salaries (World Bank (1994d)).

Underutilization of existing facilities often points to inefficiency. In Ethiopia, government health facilities in the late 1980s and early 1990s recorded only about 0.25 visits per person a year, compared with 2.5 to 3 visits per person a year in Tanzania, Kenya, and Zimbabwe (World Bank (1994d)). In Lithuania, many schools are operating below capacity; the number of vocational and college students per schools fell from an average of 460 and 720, respectively, in 1990, to 280 and 330 in 1993 (World Bank (1994c)).

Military expenditure

Military expenditure that is excessive—in the sense that the marginal improvement in national security associated with this expenditure is less than its economic cost—imposes burdens on both the spending country and other countries that believe their own security may be jeopardized by such expenditure. The issue is sensitive and difficult because it involves national security and because the measurement of national security is problematic.

From the perspective of an individual country, national security is a public good. However, considerable gains for both individual countries and the world community at large could emerge from a coordinated multilateral reduction in resources devoted to the military. No loss of national or international security need occur, provided, of course, that the uniformity of implementation could—which does not necessarily imply *equal* spending cuts—be defined and verified. This is in sharp contrast to the global impact of many other types of public sector expenditures, for example, health care and education.

The importance of these issues is highlighted by the scale of global resources devoted to military spending. Estimates of world military spend-

ing in 1988, for example, range from $850 billion to $1,000 billion, some 4.5 percent to 5 percent of world GDP.[29] Of the total, industrial countries accounted for about 60 percent, equivalent to almost 4 percent of their GDP; and Eastern Europe (including the former Soviet Union) accounted for almost 25 percent, equivalent to some 10 percent of its GDP. There are considerable regional variations among developing countries; Middle Eastern and North African countries are estimated to have devoted some $66 billion to military spending in 1988 (8.1 percent of GDP), whereas Western Hemisphere countries spent $17 billion (2.1 percent of GDP). On average, the proportion of national income devoted to the military by sub-Saharan African and Asian countries was broadly comparable to that of industrial countries, although here, too, there was considerable variation among individual countries.

While military expenditure is a unique category because national defense, or national security, is difficult to evaluate objectively, an explicit analysis of the economic implications of alternative levels of military expenditure would be an important input to the political process involved in determining the composition of public expenditure. Some aspects of the production of national defense can be subjected to economic analysis. For instance, a decline in the ratio of material expenses to the wage bill could indicate an increasing number of soldiers without proper equipment. Alternatively, such a decline could indicate a reduction in underutilized equipment.

Empirical Evidence on Public Expenditures and Economic Growth

Sustained and equitable economic growth is clearly a predominant objective of public expenditure policy. Many public programs are specifically aimed at promoting sustained and equitable economic growth. Public expenditures can—and have—played an important role in physical and human capital formation over time. Appropriate public expenditures can also be effective in boosting economic growth, even in the short run, when limits to infrastructure or skilled manpower become an effective constraint to an increase in production.

Therefore, the effect of public expenditures on economic growth may be a comprehensive indicator of public expenditure productivity. Ideally, the two components of such an indicator should be measurable: the

contribution of public sector outputs to economic growth, and the efficiency with which these expenditures yield their outputs. By pointing to a set of public sector outputs as particularly conducive to economic growth, as well as to the efficiency with which the expenditures contribute to public sector production, empirical studies on expenditures and growth can suggest ways to improve public expenditure composition and productivity. A cautious interpretation of the results of such studies is warranted, however, because not all public programs are necessarily aimed at economic growth and because public expenditures are not all that matter for economic growth. Moreover, the relationship between public expenditures and economic growth is not necessarily unidirectional. Public expenditures affect economic growth, but at the same time economic growth can lead to changes in either aggregate public expenditure (for example, in accordance with Wagner's Law)[30] or some of its components (for instance, through changes in the demand for certain public services).

Overview

A variety of empirical studies, based on time-series or cross-country data, have aimed at estimating the contribution of public expenditures to economic growth. Some studies relate aggregate public expenditures to economic growth; others focus on the relationship between certain expenditure components, such as public investment, education or health expenditures, or their components, and economic growth. The major obstacles encountered in these studies include the difficulties involved in (1) valuing public sector outputs; (2) estimating separately the impact of how public expenditures are financed (including the possible crowding out of private investment); and (3) measuring the effects of other factors on economic growth. In addition, using contemporaneous cross-country data to relate public expenditures to economic growth may not yield correct results because many public expenditure projects (for example, those on primary education and physical infrastructure) have long gestation periods.

Public Expenditures and Economic Growth

Many studies have aimed at estimating the effects of public expenditure on economic growth. Empirical studies have yielded conflicting results: some support the hypothesis that a rise in the share of public spending is

associated with a decline in economic growth (Landau (1986) and Scully (1989)); others have found that public spending is associated positively with economic growth (Ram (1986)); and still other studies have found no significant relationship (Kormendi and Meguire (1985) and Diamond (1989)). Public expenditures were observed in one study to have no impact on growth in developed countries, but a positive impact in developing countries (Sattar (1993)). In general, studies of the relationship between aggregate public expenditure and economic growth have not yielded robust results, as the results of many are sensitive to small changes in model specification (Levine and Renelt (1992)).

A number of studies have tested the effects of certain public expenditure components on economic growth. In general, these studies suggest that public sector consumption does not promote economic growth (Diamond (1989), Barro (1991), Grossman (1990), and Easterly and Rebelo (1993)). A number of studies have found a positive correlation between economic growth and various education indicators or expenditures: primary and secondary levels of educational attainment (Barro (1991) and Easterly and Rebelo (1993)); the share of expenditures on education in total expenditure (Otani and Villanueva (1990)); and capital expenditures on education (Diamond (1989)). Other studies suggest indirect links between education and economic growth, for example, through the linkage between education expenditures and private investment (Clements and Levy (1994)).[31]

In contrast to the generally positive correlations between education and growth, a number of studies have reported only a weak correlation between labor productivity—a factor strongly associated with economic growth—and health indicators (Gwatkin (1983)), although there are exceptions (for example, World Bank (1993a)).

Other strands of research have aimed at identifying the effect of household investments in education and health or public outlays on specific education and health services; these studies have found, in general, robust results, indicating the positive effects of such investments on lifetime earnings or educational and health indicators. These studies point to the productivity of primary education and community health services, particularly in developing countries, as well as health education and preventive health care expenditures (Ryoo (1988); Haddad and others (1990); Winkler (1990); Atkin, Guilkey, Popkin, and others (1992); Jamison (1993); Psacharopoulos (1993); and World Bank (1993b)).

Some studies have aimed at assessing the effects of military expenditures on economic growth. Military expenditures can create jobs, and military research and development programs can promote technological progress. While some studies have reported a positive correlation between military expenditures and economic growth, this positive correlation reflects to a large extent the effects of an increase in military outlays on aggregate demand during recessionary periods (Benoit (1973)). When resources are fully employed, the simple theory of opportunity costs implies that military expenditures will crowd out other expenditures, including private investment. Several more recent studies (for example, Deger (1986)) suggest that this effect dominates any positive impact of military outlays on growth.[32]

Public Investment and Economic Growth

Public investment is an area that can have direct relevance for economic growth. Public investment in basic infrastructure is an essential precondition for capital accumulation in the private sector. Public investment in education and health facilities improves human capital formation. However, public investment is also an area where grossly unproductive white elephants can be found.

While the contribution of public investment to economic growth has been invariably assumed theoretically, empirical studies based on aggregate public expenditure data have found only weak links between public investment and economic growth. Using cross-country data to test the relationship between public investment and economic growth, some recent research in this area has found only a statistically insignificant relationship (Barro (1991)). Other research has found that capital spending on education, health, and housing has a positive effect on economic growth (Diamond (1989)). Some others have used U.S. data to test the effects of public investment on the productivity of existing capital stock, private capital spending, and employment. While many studies have found positive effects, the effect of public investment on private capital spending appears to be strongly influenced by the extent of crowding out (for example, Aschauer (1989a) and (1989b), Munnell (1990), and Holtz-Eakin (1992)), while cross-country studies including the developing nations have failed to produce robust statistical results linking public investment and growth (Levine and Renelt (1992)).

Conclusions and Some Pragmatic Suggestions for Policy Formulation

Together with efforts to mobilize revenue, public expenditure policy is at the core of any successful effort to achieve efficient and equitable adjustment. Focusing only on revenue policy is not enough. Nor is it sufficient, even from a macroeconomic perspective, to focus only on the level of public expenditure. Public expenditure productivity has critical implications for fiscal adjustment, particularly as the competition for limited public resources intensifies. Public expenditure policy issues, including those relating to the efficiency of public expenditures and public expenditure composition, are vital for efficient and sustainable fiscal adjustment.

Conclusions

The following conclusions can be derived from the consideration of the economic implications of unproductive public expenditures.

• All countries can increase public expenditure productivity by improving both the efficiency of individual public programs and the composition of public programs. To this end, a systematic economic analysis of public sector production processes and public expenditures should support the formulation and execution of public expenditure policy. The present practice of public expenditure policy formulation and execution in many countries falls short of this goal.

• Assessing public expenditure productivity is complicated. In particular, it is difficult to avoid making value judgments. Nevertheless, the search for efficient means of achieving established objectives, to a considerable extent, does not require value judgments. Moreover, an assessment of the economic costs of achieving alternative objectives is necessary if a country is to resolve the difficult choices related to public expenditure composition and, more broadly, to assess the trade-offs related to the macroeconomic and structural implications of pursuing different objectives.

• In achieving public expenditure efficiency in the areas of military expenditures and producer subsidies, international cooperation is crucial.

• Proper public expenditure analysis requires proper statistical data. Ideally, the authorities should collect in a timely fashion the relevant comprehensive data on economic and functional expenditure components and subcomponents that encompass all proper public entities, including

local governments and extrabudgetary institutions. In addition, data on expenditures in each functional category should be broken down into their economic components. Other types of data (for example, detailed social indicators) are also required for effective public expenditure policy analysis. The statistical data being collected now are far from adequate.

Some Pragmatic Suggestions for Policy Formulation

From the preceding analysis, it is possible to identify some practical steps for identifying unproductive expenditures and improving overall expenditure productivity. It should be noted that the steps enumerated below are by no means exhaustive. Rather, they are meant to illustrate to policymakers that simple yardsticks can yield economically meaningful results when, owing either to data or time constraints, or both, a comprehensive analysis is not possible.

• The policymaker should attempt to identify public sector outputs that can be provided or produced more efficiently by the private sector without compromising other possible objectives, such as an equitable distribution of income.

• The policymaker should examine whether the primary objective of the project or program is being met in the most cost-effective way. It is possible that the secondary objective dominates the primary objective. For instance, if the aim is to employ large amounts of labor in order to provide income support to the unemployed, it may be more efficient to include specific unemployment benefit programs for the poor in the budget instead of adding employment objectives to existing projects.

• White elephant projects or programs in both recurrent and capital components of the budget may be identified by focusing on big-ticket items, particularly the domestically financed ones. It is important to note, however, that small projects often escape close monitoring and thus can result in significant waste in the aggregate. Donor-financed projects or programs in many developing countries are more likely to have been subjected to cost-benefit analysis.

• The existence of generalized food or producer subsidies is indicative of the potential for savings in expenditures. Different schemes—along the lines discussed in the pamphlet—can be introduced to retain benefits in the short term in a form that is less expensive to the budget.

• A comparison of expenditure allocations under either functional or economic headings with countries at the same level of development and in the same region can be useful. A particularly high level of expenditure in one category could be symptomatic of expenditure inefficiencies. Similarly, changes in indices of the achievement of objectives, such as increasing literacy or declining mortality in relation to expenditures, may indicate the adequacy or efficiency of certain types of social expenditures, such as those on education or health.

• Budgetary allocations for different ministries or sectors in terms of wage and nonwage expenditures may provide an idea of expenditure productivity. Relatively low nonwage current expenditures, particularly in education and health sectors, are indicative of low expenditure productivity, as under these conditions schools will have an inadequate provision of books and other materials for teaching and hospitals will lack medical supplies. Some waste may exist when nonwage outlays are relatively large in a specific sector or ministry.

• Besides an assessment of the relative budgetary allocations for wage and nonwage outlays, an analysis of overall and sectoral employment, disaggregated by type of employee, can be useful. Many developing countries have a shortage of skilled manpower at the middle and higher levels of the civil service but have a large number of low-level employees ineffectively employed. Gradually reducing the number of low-level employees through attrition or specific separation schemes can help raise expenditure productivity.

• Inefficient expenditures may be found in the accounts of extrabudgetary funds or in the quasi-fiscal activities of the central bank. These expenditures should be made transparent and scrutinized for any unproductive outlays.

Appendix: Patterns of Government Expenditure by Country Groups

International comparisons of public expenditure composition in relation to economic and social indicators can provide a useful basis for addressing imbalances in the use of public resources.[33] While the composition of spending at a given time does not indicate public expenditure efficiency, changes in the composition or deviations from an international norm in relation to indices measuring the achievement of objectives (for example, with respect to literacy and mortality rates) may suggest a potential scope for action. This approach complements rather than substitutes for the sort of analysis described in the pamphlet.

Table A1 provides a profile of central government expenditures during 1983–1990 for 80 countries as reported in the *Government Finance Statistics Yearbook.* The table was constructed by taking weighted averages based on conversion to U.S. dollars using official exchange rates. Countries were grouped into 18 low-income countries, with per capita incomes below $600 in 1990; 36 middle-income countries, consisting of nations with per capita incomes between $600 and $4,500; and 26 high-income countries. These country groups differ only slightly from the IMF's world economic outlook classifications.

Note, however, that regulations and price controls make it difficult to draw firm conclusions about government activities from analysis based on available government expenditure data. For example, in some middle-income and low-income countries with grossly distorted prices, implicit subsidies may exceed budgetary subsidies. Similarly, the wage bill as reported in the budget data may underestimate true labor costs on account of various in-kind entitlements.

Despite these limitations, Table A1 suggests a number of patterns. With regard to economic components, middle-income and low-income countries allocate large amounts of central government resources for capital expenditure and net lending, while high-income countries spend large amounts on subsidies and transfers. Transfers include social security payments. It is also notable that middle-income countries spend relatively large amounts on wages and salaries, although Table A2 suggests that the data for the general government may indicate a different pattern.

With regard to functional components, a notable difference between high-income countries and other countries is the former group's spending

of large amounts on social security and welfare (under the category "subsidies and transfers" in the economic components). The burden of military expenditures for low-income countries exceeds that for middle-income countries, and the central governments in low-income countries spend very small amounts on health and social security.[34]

Both the level and composition of public expenditure would be different if the data covered all entities of the public sector, including extrabudgetary institutions and local governments. To provide some indication of general government expenditure composition, data for a much-reduced number of countries and years are shown in Table A2. It should be noted, in particular, that the sample of low-income countries includes only three countries. Data for the central government and the general government in Tables A1 and A2 are thus not strictly comparable because the sample countries and sample years differ. The change in the expenditure composition resulting from extending the coverage from the central government to the general government is shown in Tables A2 and A3, both of which are based on the same set of countries and years. Tables A2 and A3 point to the importance of local governments in social sector programs, including health, education, social security and welfare, and housing in all countries. It is notable, however, that low-income countries allocate relatively small amounts of resources for health, social security, and housing even at the general government level.[35]

TABLE A1. SHARE OF CENTRAL GOVERNMENT EXPENDITURE IN GDP AND IN TOTAL EXPENDITURE FOR 80 COUNTRIES, 1983–90

(In percent)

	High-Income[1]		Middle-Income[2]		Low-Income[3]		All Countries	
	GDP	Total expenditure	GDP	Total expenditure	GDP	Total expenditure	GDP	Total expenditure
Expenditure by economic type	31.4	100.0	26.6	100.0	21.6	100.0	30.4	100.0
Current expenditure	29.1	92.9	20.9	79.0	14.0	64.7	27.5	90.5
Goods and services	8.4	26.9	8.8	33.3	5.4	25.1	8.3	27.4
Wages	3.7	11.9	5.5	21.2	2.5	11.5	3.9	12.8
Other goods and services	4.7	15.0	3.2	12.2	2.9	13.6	4.5	14.6
Interest	3.6	11.5	5.0	18.6	3.0	14.0	3.8	12.4
Subsidies and transfers	17.1	54.5	7.2	27.1	5.5	25.2	15.4	50.7
Capital expenditure	1.8	5.7	3.8	14.5	4.3	19.9	2.2	7.1
Lending minus repayments	0.4	1.3	2.3	8.0	3.3	15.2	0.8	2.5
Expenditure by function[4]	30.9	100.0	24.3	100.0	18.4	100.0	29.5	100.0
Defense	4.4	14.2	2.0	8.2	2.8	15.3	4.0	13.6
Education	1.6	5.0	2.8	11.4	1.0	5.4	1.7	5.7
Health	3.7	12.0	1.2	5.0	0.4	2.2	3.3	11.0
Social security and welfare	10.6	34.4	3.6	14.9	0.1	0.8	9.3	31.5
Housing	0.7	2.2	0.6	2.4	0.7	3.8	0.7	2.3
Economic services	2.8	8.9	4.8	19.6	4.6	25.0	3.1	10.5
Other government services	3.8	12.2	4.4	18.1	5.7	30.8	3.9	13.2
Interest	3.4	11.1	5.0	20.2	3.0	16.3	3.6	12.2
Number of countries	26	26	36	36	18	18	80	80

Source: IMF, *Government Finance Statistics Yearbook,* 1993.

Note: The sums of the components do not necessarily equal the totals because some minor components are not shown.

[1]Weighted average of data for Australia, Austria, Bahrain, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Korea, Kuwait, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, United Kingdom, and United States.

[2]Weighted average of data for Argentina, Barbados, Bolivia, Botswana, Brazil, Chile, Colombia, Costa Rica, Cyprus, Dominican Republic, Egypt, El Salvador, Fiji, Guatemala, Hungary, Iran, I.R. of, Jordan, Malaysia, Malta, Mauritius, Mexico, Morocco, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Romania, Swaziland, Thailand, Tunisia, Turkey, Uruguay, Vanuatu, Venezuela, and Zimbabwe.

[3]Weighted average of data for Burkina Faso, Cameroon, The Gambia, Ghana, India, Indonesia, Kenya, Lesotho, Liberia, Malawi, Maldives, Mali, Nigeria, Pakistan, Sierra Leone, Sri Lanka, Zaïre, and Zambia.

[4]Does not include lending minus repayments.

TABLE A2. SHARE OF GENERAL GOVERNMENT EXPENDITURE IN GDP AND IN TOTAL EXPENDITURE FOR 18 COUNTRIES

(In percent; two-year averages in 1983–90 period)

	High-Income[1]		Middle-Income[2]		Low-Income[3]		All Countries	
	GDP	Total expenditure	GDP	Total expenditure	GDP	Total expenditure	GDP	Total expenditure
Expenditure by economic type	39.1	100.0	24.1	100.0	27.8	100.0	38.3	100.0
Current expenditure	36.2	92.5	19.0	79.0	17.8	64.2	35.0	91.4
Goods and services[4]	18.0	46.0	8.5	35.1	9.3	33.6	17.4	45.5
Wages	8.9	22.7	2.9	12.2	5.6	20.3	8.6	22.5
Other goods and services	8.5	21.8	4.1	17.0	3.7	13.3	8.2	21.5
Interest	4.4	11.2	1.0	4.3	3.2	11.4	4.2	11.1
Subsidies and transfers	13.8	35.3	9.5	39.5	5.3	19.2	13.3	34.9
Capital expenditure	2.9	7.4	4.4	18.1	5.6	20.2	3.0	7.9
Lending minus repayments	—	—	0.2	0.8	3.8	13.7	0.2	0.5
Adjustment for reporting difference between intergovernment grants and transfers	—	0.1	0.5	2.2	0.5	1.9	0.1	0.2
Expenditure by function[5]	39.1	100.0	23.9	100.0	23.9	100.0	38.1	100.0
Defense	4.7	12.0	1.5	6.5	3.1	12.8	4.5	11.9
Education	4.9	12.5	2.4	10.1	3.3	13.7	4.8	12.5
Health	5.1	13.1	1.7	7.0	0.8	3.5	4.8	12.7
Social security and housing	11.3	28.8	7.0	29.3	2.0	8.2	10.8	28.2
Economic services	3.7	9.4	6.4	26.7	6.5	27.3	3.9	10.2
Other government services[6]	5.1	13.1	3.9	16.2	5.1	23.1	5.1	13.4
Interest	4.4	11.2	1.0	4.3	3.2	11.4	4.2	11.1
Number of countries	8	8	7	7	3	3	18	18

Source: IMF, *Government Finance Statistics Yearbook,* 1993.

Note: The sums of the components do not necessarily equal the totals because some minor components are not shown.

[1]Weighted average of data for Australia, Canada, Denmark, Germany, Israel, Luxembourg, United Kingdom, and United States.

[2]Weighted average of data for Argentina, Chile, Hungary, Panama, Romania, Swaziland, and Zimbabwe.

[3]Weighted average of data for India, Indonesia, and Malawi.

[4]"Wages" and "Other goods and services" do not add up to "Goods and services" because Australia, Argentina, and Panama do not have a breakdown of "Wages" and "Other goods and services."

[5]Excludes net lending.

[6]Includes unallocated adjustments and unclassified expenditure.

TABLE A3. SHARE OF CENTRAL GOVERNMENT EXPENDITURE IN GDP AND IN TOTAL EXPENDITURE FOR 18 COUNTRIES

(In percent; two-year averages in 1983–90 period)

	High-Income[1]		Middle-Income[2]		Low-Income[3]		All Countries	
	GDP	Total expenditure	GDP	Total expenditure	GDP	Total expenditure	GDP	Total expenditure
Expenditure by economic type	25.9	100.0	19.0	100.0	22.2	100.0	25.5	100.0
Current expenditure	24.6	95.1	15.7	83.2	13.9	62.8	23.9	93.7
Goods and services	7.8	30.3	5.4	28.5	4.9	22.0	7.6	29.9
Wages[4]	2.8	10.7	2.2	11.6	2.4	10.9	2.7	10.7
Other goods and services	4.9	18.8	3.2	16.9	2.5	11.1	4.7	18.5
Interest	3.3	12.9	0.9	4.6	3.0	13.6	3.2	12.7
Subsidies and transfers	13.4	52.0	9.4	50.1	6.0	27.1	13.0	51.0
Capital expenditure	1.2	4.7	3.3	16.8	4.2	18.9	1.4	5.5
Lending minus repayments	—	—	—	—	4.1	18.3	0.2	0.8
Expenditure by function[5]	25.8	100.0	19.0	100.0	18.2	100.0	25.3	100.0
Defense	4.7	18.2	1.4	7.5	3.0	16.3	4.5	17.9
Education	1.0	3.7	1.2	6.1	0.8	4.2	1.0	3.8
Health	3.4	13.2	1.2	6.4	0.3	1.9	3.2	12.8
Social security and housing	9.0	35.0	5.9	31.0	0.9	4.9	8.6	34.0
Economic services	2.0	7.9	5.5	28.8	4.2	23.1	2.2	8.8
Other government services	2.3	9.1	2.9	15.6	6.0	35.9	2.5	10.0
Interest	3.3	12.9	0.9	4.6	3.0	13.6	3.2	12.7
Number of countries	8	8	7	7	3	3	18	18

Source: IMF, *Government Finance Statistics Yearbook*, 1993.

Note: The sums of the components do not necessarily equal the totals because some minor components are not shown.

[1]Weighted average of data for Australia, Canada, Denmark, Germany, Israel, Luxembourg, United Kingdom, and United States.

[2]Weighted average of data for Argentina, Chile, Hungary, Panama, Romania, Swaziland, and Zimbabwe.

[3]Weighted average of data for India, Indonesia, and Malawi.

[4]Australia does not have data for wages.

[5]Excludes net lending.

Notes

1. A l a rge body of literature exists in this area. For collections of papers on various aspects of public expenditure policy, see, for example, Sahni (1972), Posner (1977), Haveman and Margolis (1983), and Chu and Hemming (1991). A concise presentation of budgetary choice as a three-tier problem (public versus private provision, public sector output mix, and program design) may be found in Peacock (1979, Chapter 8).

2. If all public expenditure programs were cost-effective, the public sector output mix question, for a given level of aggregate public expenditure, would be equivalent to the public expenditure composition question, and an increase in an output (and its cost) could not be achieved without reducing other outputs (and their associated costs).

3. According to public choice theory, legislators have an incentive to enhance their political support by voting for spending projects in their districts because wealth is transferred to their voters while the costs are borne by all voters in the country. By the same token, legislators are reluctant to increase taxes that affect their constituencies (Buchanan, Rowley, and Tollison (1987)).

4. A survey by the authors for 1991 found that the economic classification of expenditure was provided in the IMF's recent economic development documents for 85 percent of the countries surveyed. The functional mix classification was provided for only 40 percent of the countries. In contrast, the 1993 *Government Finance Statistics Yearbook* provides data on the functional mix for 97 countries, but with considerable time lags.

5. See the discussion of the effects on growth and the debt burden in Tanzi (1989) and (1991).

6. Zietz and Valdes (1986) found that the subsidization and protection of beef, sugar, maize, and wheat production in industrialized countries impose significant costs on developing country exporters in terms of forgone foreign exchange earnings and reduced welfare. While consumers in importing countries may benefit from low prices, worldwide resource allocation may be distorted.

7. See Bayoumi, Hewitt, and Schiff (1995) for a related discussion.

8. For a discussion of specific steps suggested for improving public expenditure productivity in the United States, see Gore (1993). In particular, Chapter 4 suggests specific actions to eliminate unnecessary programs, to invest in greater productivity, and to cut costs by redesigning programs, as well as to price public services appropriately.

9. Empirical studies have confirmed, in particular, the importance of competition in ensuring efficiency. For a recent summary of empirical evidence on ownership, competition, and efficiency, see Vickers and Yarrow (1991).

10. See Summers and Wolfe (1977), Alexander and Simmons (1978), Heyneman and Loxley (1983), Fuller (1987), and Haddad and others (1990).

11. See the World Bank public expenditure reviews for Tanzania (World Bank (1994b)) and Ethiopia (World Bank (1994d)).

12. See Corman, Joyce, and Grossman (1987).

13. Such outlays are widespread in all economies. The savings and loans crisis in the United States provides an example of the possible consequences of government guarantees.

14. While household data sets are increasingly available, including those generated by the World Bank's social dimensions of adjustment program, as well as by living-standard measurement surveys and national household surveys, very few studies utilize this information to assess distributional concerns.

15. It is an open question whether federal systems are more efficient with respect to unproductive expenditure than more centralized systems. In principle, a federal system can be more efficient if local governments are (1) better able to identify (than the central government) the appropriate level of local expenditures, for example, through their better knowledge of local conditions; and (2) subject to financial discipline through political checks and balances of central government regulations.

16. Examples of the way in which political pressure slowed down the reform of cost-ineffective social security systems in Poland are discussed in Chapter 7 of Graham (1994).

17. General government data, while likely to show different patterns, are very limited in their coverage. See Appendix, Table A2.

18. Wage drift, owing to the use of public sector employment for social protection, was a major problem in many countries implementing programs supported by the IMF's structural adjustment and enhanced structural adjustment facilities (Nashashibi and others (1992)).

19. Sri Lanka and The Gambia have also achieved a major reduction in the size of the civil service (see Nashashibi and others (1992)).

20. The IMF's government finance statistics data for a sample of 68 countries indicate that subsidies and transfers increased between 1975 and 1990; this increase was most pronounced in industrial countries, where these expenditures increased from 18 percent to 22 percent of GDP.

21. Government capital outlays and public investment overlap but are not identical. The former include outlays on purchases of existing capital assets, which are not part of public investment.

22. For further discussions, see Posner (1977) and Drèze and Stern (1987).

23. See, for example, Tanzi (1991) for a discussion of the experience in Asian countries, and IMF (1992) for a related discussion.

24. See Miranda (1991) for a discussion of cost-benefit analysis in general and Heller (1991) for a discussion of operations and maintenance expenditure.

25. For a recent discussion of the role of the public sector in human capital formation, macroeconomic adjustment, and growth, see Otani and Villanueva (1990), Blejer and Chu (1990), the World Bank (1990), and Tanzi and Chu (1992).

26. A sample of 18 low-income countries spent a relatively small amount on health at the central government level. For example, during 1983–90, health expenditure in low-income countries was only 0.4 percent of GDPand 2.2 percent of total central government expenditure—far less than military expenditure. This share is substantially lower than that of middle-income countries (Appendix, Table

A1). By contrast, life expectancy is substantially shorter and mortality rates for children under the age of 5 are substantially higher in low-income than in middle-income countries. Limited general government data for a sample of 3 low-income countries do not alter the picture (Appendix, Table A2).

27. The positive correlation between schooling and good health is well documented. See Kenkel (1991) for a discussion of these linkages. The 1993 World Bank *World Development Report* also stresses the importance of the complementarity of health and education, in particular, the education of females in developing countries (World Bank (1993a)).

28. The World Health Organization's strategy for assuring health for all by the year 2000 is based on expanding primary health care, including adequate safe water and sanitary facilities, immunization, local health care, and care for pregnancy and childbirth (see World Health Organization (1986)). Comprehensive data on preventive and curative health care expenditure are unavailable; a survey of available data by the authors indicates, however, that, during 1983–90, in a sample of eight low-income countries with large rural populations, 62 percent of the central government health care budget was allocated for hospital services, compared with 38 percent for other public health services, including outlays on small clinics and preventive health care. This share is even lower than the share (45 percent) for middle-income countries surveyed.

29. Based on data compiled by the Stockholm International Peace Research Institute and the U.S. Arms Control and Disarmament Agency; comprehensive data from official sources are not available. The data for Eastern Europe (including the former Soviet Union) should be interpreted with particular caution, as the structure of relative prices differed markedly from that prevailing in western countries. See Hewitt (1991a) and (1991b) for more details. The data on which the analysis is based in this section differ from those reported in the appendix. For those countries included in the sample shown in the appendix, defense expenditures accounted for 4.4 percent, 2.0 percent, and 2.8 percent of GDP in high-income, middle-income, and low-income countries, respectively (Appendix, Table A1).

30. Writing in the 1880s, Wagner anticipated that the development of a modern industrial society would give rise to an increase in government expenditure as a result of increasing political pressure for social programs. For more on Wagner's Law, see Wagner (1958).

31. Some other studies, however, suggest no correlation between economic growth and some components of expenditures on education, such as current expenditures (Diamond (1989)).

32. See Hewitt (1991a) and (1991b); Bayoumi, Hewitt, and Schiff (1993); and Bayoumi, Hewitt, and Symansky (1993) for discussion on the economic implications of military expenditures.

33. See, for example, Tait and Heller (1982) and Heller and Diamond (1990).

34. Note that high-income countries include not only the countries classified as "industrial" for the world economic outlook exercise but also some of those classified as "oil exporting" and "newly industrialized."

35. For each expenditure component, the ratio of expenditure to GDP for the general government should exceed that for the central government. The exceptions are a few components, such as “subsidies and transfers” and “net lending,” which, because they include central government transfers and net lending to local governments, may be smaller for the general government than for the central government if central government transfers and net lending to local governments are spent on components other than transfers and net lending by local governments.

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