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The Problem of Recurrent Costs in the Budgeting and Planning Process

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Contents

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I. Introduction

There is a widespread consensus that recurrent cost financing has become a serious problem for government policymakers in the developing world. The recurrent cost problem refers to the likelihood that available budgetary resources may be severely constrained in future years, thus limiting the capacity of future budgets to finance the recurrent costs of investment projects presently under consideration. Failure by governments to take account of the recurrent cost implications of projects at the time they are evaluated and implemented, may lead to a scarcity of funds to finance the operations and maintenance of the projects once they are completed.

The emergence of this problem reflects in part the fact that the momentum of development investment in some countries has engendered a demand for recurrent expenditure for operations and maintenance that has exceeded the availability of funds, because of a host of other policy commitments. In other countries, the failure by the planning and budgeting officials to take account of the recurrent cost implications of investments has led to inadequate recurrent budgetary allocations for particular projects, even when the funds are in principle available. This paper examines alternative approaches to the resolution of this problem. Maintaining a general orientation, it will explore the types of issues that governments would have to consider in dealing with the recurrent cost problem. Thus, it does not attempt to pinpoint the specific changes that would be necessary in any one of the Sahelian countries, for example. Rather, it examines the reforms that are needed in the budgeting and planning process to take account more adequately of the recurrent cost implications of projects.

Reforms are required at various stages in the process, particularly those relating to project initiation and evaluation within the operating ministries, project coordination within the central planning office, budget formulation and medium-term financial planning within the ministry of finance, and manpower planning within the bureaucracy responsible for personnel recruitment and training. There are two components to these reforms.

One is informational and ensures that data on the recurrent cost implications of projects are compiled and made available to the relevant policymakers and that such policymakers are sensitive to the effects of underfinancing on project productivity. While the greater availability of such data would be a significant reform indeed for many countries, its ultimate impact will be small unless countries are prepared to act on the basis of this information.

Second, policymakers, in their choice of projects, must be conscious of ensuring that the totality of present policy commitments does not imply expenditure commitments that exceed the available budgetary resources of future periods. In addition, in a tight budgetary situation, policymakers need to reflect on the trade-off in benefits that arises when capital investments are made at the expense of inadequate recurrent budgetary allocations to existing or new programs. In part because of the many political, social, and economic bases on which expenditure decisions are made, policymakers have no simple guidelines to follow. One cannot simply advise rejection of high-recurrent-cost education projects at the expense of low-recurrent-cost power projects; the benefits of the former may far exceed the latter. Yet policymakers must become aware of these trade-offs and must learn to adapt themselves to future as well as present budgetary constraints.

Introduction of such reforms will not be easy and may take several years. Formal compliance with these recommendations should not be confused with their meaningful introduction. The interests of the individual operating ministries often do not correspond to those of the central financial ministries. Individual ministries may be tempted to comply with the reforms only in a perfunctory manner, or may attempt to use the reform process to circumvent some of the restrictions associated with the normal budgetary review process. Where possible, this paper shall make note of some of the pitfalls that may accompany the introduction of reforms related to the recurrent cost problem.

II. Project Initiation Phase

It is widely accepted in the literature on development planning that public investment projects should be appraised in terms of their net social profitability. Techniques of cost-benefit analysis have already been elaborated and need not be discussed at this time. 1/ If all projects were indeed subject to a net profitability criterion, it would in principle be easier to avoid the recurrent cost problem. For such an evaluation requires an analysis of the stream of benefits and costs over the life of the project, with adequate consideration given to shadow pricing the cost of foreign exchange and labor. Such an exercise would readily provide the basic data on project expenditure and possibly revenue flows, so that sectoral or central planners could evaluate the overall recurrent expenditure implications of the set of projects intended for implementation in any period. In principle, if it appeared that the demand for recurrent budgetary resources exceeded those available in the future, some shadow price for a dollar of budgetary resources could be

1/ See United Nations Industrial Development Organization, Guidelines for Project Evaluation (New York: United Nations, 1972).

estimated and the cost-benefit calculations revised, taking into account the effects of this type of budgetary constraint. 1/

Unfortunately, project appraisals are more the exception than the rule in most developing countries. In part this reflects the scarcity of professional economists within the operating ministries and donor agencies that originate projects, but it also reflects the difficulties in estimating and quantifying the benefits associated with many projects, particularly in many of the social service sectors. It is unrealistic to recommend that projects not be initiated without the kind of rigorous cost-benefit analysis presumed above, but two important principles of project appraisal still need to be observed.

First, some appraisal of the presumed benefits and costs of a project must be made, even if it does not satisfy the ideal requirements of the traditional cost-benefit analysis. It would make no sense to implement a set of procedures that pre-empted future scarce budgetary resources for projects that would never be implemented if rational economic criteria were applied in their appraisal. Perhaps the most important reform that one could hope for with respect to the recurrent cost issue is the rigorous appraisal of projects at the time of their initiation. By rejecting badly designed or conceived projects, however meritorious their intention, one can save resources in the present and avoid the often politically difficult task of cutting back or eliminating recurrent funds for unproductive projects. It is important to stress that, even after a project has been implemented, it must stand or fall on its own merits. Projects that, in hindsight, appear to have been ill-advised but that have been implemented nevertheless, do not necessarily have a binding claim on recurrent budgetary resources.

Second, even if it is difficult to assess and quantify the benefits of a project, it should be possible to estimate the costs, capital and recurrent, over a reasonable time frame. Such cost estimates would constitute a starting point for the evaluation of a project, both in terms of its basic economic desirability, and in terms of its probable impact on the various constraints that are likely to affect the feasibility of a development program (the availability of foreign exchange, budgetary resources, skilled manpower, etc.).

To implement these principles, each ministry initiating a major project for inclusion in the budget--either on its own or with the expectation of donor support--should be required to submit both to the central planning office and to the ministry of finance a standardized form that provides a basic description of the project (Table 1). This

1/ An approach to taking account of the shadow price of figure budgetary resources is discussed in Peter Heller, The Dynamics of Project Expenditures and the Planning Process: With Reference to Kenya (unpublished doctoral dissertation, Harvard University, 1971), pp. 243-301.

Table 1. Project Summary

Part A.

Originating ministry

Head _____ Project No. _____ Priority: Underway _____ Committed _____ Highly Desirable _____ Desirable _____

Title _____

Donor _____ Grant/Loan _____

Nature and project objectives: 1/

Relationship of project to existing programs

Part B.	New Budget Year (NBY)	NBY + 1	NBY + 2	NBY + 3	NBY + 4	NBY + 5	NBY + 6
(In prices of the new budget year, unless otherwise stated) 2/							
Benefits (specified and quantified, if possible) 3/							
Costs							
Capital expenditure							
Local							
Donor							
Capital revenue							
Foreign							
Recurrent expenditure: operations							
Personnel expenditure							
Other purchases of goods and services							
Transport							
Other							
Recurrent expenditure: maintenance							
Recurrent revenue: user charges							
Number of additional personnel posts required:							
Administrative							
Technical							
Clerical							

Part C. Other Project Characteristics

Training Requirements

Recurrent expenditure to be borne by

Ministry 1
Ministry 2

Underlying technological assumptions

What is the role of the different inputs in the production of the project's output, once operational?

1/ In this section, a full description of the project should be presented, with objectives focused on the relationship of the project to broad national, regional, and sectoral aims.

2/ The price basis of the estimates should be clearly specified. In general, estimates should be based on prices in effect at the time the estimates are prepared.

3/ Efforts should be made to estimate any indirect revenue effects, arising from an increase in the tax base.

would contain sufficient data to permit a sound appraisal of the project. Projects involving capital costs above a certain amount should be classified as major projects. Although in principle the following information is needed for all projects, it would initially be too burdensome on the sectoral bureaucracies to demand such data on any but the most important projects within a ministry.

Basic information would include the following:

1. Project objectives and, if possible, estimation of project benefits for the life of the project. Where possible, the phasing of the benefits in the first five years should be provided; the role of the project in the context of the development plan should also be noted.

2. An evaluation of the consistency of a new project with existing programs of a ministry. In effect, a sectoral ministry must prove that existing programs cannot provide the services and recurrent expenditure requirements of a new project. There are many instances of projects that duplicate or excessively overlap existing programs; often facilities and/or staff are already performing some of the tasks envisioned for the new project.

3. Capital and recurrent costs of the project. In addition to the expected capital cost, the recurrent cost of the project in each of the first five years after the project has been implemented should be estimated. This would take account of the possibility that recurrent costs might be low at first and grow over time. The recurrent cost estimates need to be disaggregated in terms of the following criteria:

(a) Operations versus maintenance costs. These two elements of recurrent cost are often subject to completely different time profiles, with some maintenance costs occurring continuously and others occurring in spurts often several years after the project has begun. Operating costs are likely to grow in the first few years and then, perhaps, stabilize in real terms.

(b) Direct foreign exchange costs of the project. If possible, it would be useful to distinguish between the foreign exchange components of both the capital and recurrent costs, in order to adequately consider the full balance of payments implications of a project over time.

(c) Revenue implications of projects. Does a project expect to rely on user charges for project services? Is a project likely to lead to an increase in output over the medium term that would yield an increase in tax revenue? Where user charges are contemplated, will such revenue be allocated to the project, to the operating ministry, or to the general revenue budget? The answers to these questions will help to determine the net recurrent cost implications of the project.

(d) Staff requirements. What administrative, technical, and clerical staff will be required?

4. Training needs. Will training programs have to be initiated to obtain such manpower? It is often assumed that the needed skilled manpower will be readily available in the local labor markets at the time the project is implemented. Yet, often, the sum of implemented projects will require more skilled manpower than is locally available, and as a consequence projects find themselves short of the required personnel or are forced to hire such staff at higher-than-anticipated salary levels, either in local or international labor markets.

5. Identification of institutions bearing the recurrent costs of the project. In many countries, the ministry of works may be required to maintain a building or a road from its budget, while other sectoral ministries are required to finance the operating costs of the project. In budgetary planning, the ministry of finance must not only ensure that there are sufficient funds at an aggregate level to finance recurrent costs, but also that these funds are allocated to those ministries whose responsibilities have increased.

6. A statement of the intended technology of the project. With respect to a project's "technology," the central planning office or ministry of finance will have to determine if the specified inputs are really necessary to implement the project. When a project is initiated, there may be a tendency by the sectoral ministry to understate its recurrent cost implications in order to make it more attractive to the budget or planning authorities. The opposite occurs when the project is completed. In some countries, when such recurrent cost implications are treated separately from the normal request for an increase in a ministry's budget, operating ministries are required to specify the recurrent costs of a project once it has been completed. In such cases, it has been observed that the operating ministries have tended to overstate the needed recurrent costs of a project. They have found that it may be easier to get additional recurrent funds by linking their requests to specific projects than to get such funds through the normal budgeting process.

In effect, this understatement or overstatement of project recurrent expenditure needs constitutes a way of circumventing the planning and budgeting process. Projects should neither be starved for recurrent funds, nor used to obtain funds that may go beyond a project's needs. This poses special difficulties for the project or budget analyst, since it requires accurate evaluation of the underlying technological assumptions of a project.

The information requirements specified above are not trivial and are necessary for even the most basic appraisal of the desirability of a project and its consistency with the financial and manpower demands of the proposed budget or development plan. Such data should be provided not only for major projects financed by the government's budget,

but even for large foreign-financed projects that may be outside the government's capital budget (as is currently the practice in several of the Sahelian countries). The donors should be encouraged to provide such data for their projects. Major projects for which such data cannot be provided should be reviewed by the operating ministries for further preparation and possible inclusion in a subsequent year's budget.

One must recognize, however, that it is impossible to collect and analyze such data on all projects included in the capital budget. In some countries, a large number of projects that are small in terms of their investment costs, are included in the budget; for these projects it would be impractical to collect the detailed data discussed above. This does not mean one should ignore the recurrent cost implications of small projects, for their recurrent costs can be high relative to their investment costs. Rather, the budget planner should make a rough evaluation of the likely recurrent cost implications of such projects; and where possible, he should group small projects by type (e.g., small feeder road construction, primary school construction, etc.), and gauge the recurrent cost implications of the various groups rather than of each individual project.

To implement such procedures, the principal sectoral ministries initiating development projects should assign a full-time planning officer with the economic skills to coordinate the preparation of these project forms. Where a project has been initiated with the support of a donor, the operating ministry should obtain the assistance of the donor agency in the specification of this project information.

One objective of these project forms is to allow the central planning office and the ministry of finance to estimate the demand for recurrent funds that is likely to emerge in subsequent years. Critical to any such projection is an assessment of when particular projects will come on stream and require recurrent funds. This obviously hinges on the progress of project implementation. In almost all countries, delays in project implementation are a common experience. Such delays are often caused by revisions of the expected capital and recurrent costs of the project from those originally envisioned for it.

This suggests that, as part of the annual budgeting process, project forms should be prepared for ongoing projects or for projects approved in previous years but for which implementation has not yet begun (Table 2). While such forms would not require the detail envisaged above, they would require the operating ministry to indicate the original estimates for the project and any changes that have occurred, both in financial and manpower terms and in terms of the expected time phasing of implementation and operation of the project.

Table 2. Report Formula: Project Progress Report

Department_____	Estimated Project Cost (Total)	Estimated Expenditure to End of Present Budget Year	Estimated Expenditure New Budget Year (NBY)	Cumulative Quantity Totals			Stage of Physical Progress Planned	Stage of Physical Progress Reached
				Original estimate	Revised expenditure estimate	Actual expenditure to date		
Project title								
Comments								
Financial progress								
Physical progress								

Comment on how physical progress compares with anticipated progress, explaining reasons for any variation.

One approach that many countries have found useful in this regard is the establishment of a project file or index card system, both within the operating ministries and in the central planning and financial ministries coordinating the budget and development program.

An important issue that arises in the calculation of revenue and expenditure projections is the choice of assumptions with respect to the rate of inflation, the growth of nominal wage rates, the expected cost of foreign exchange, etc. When estimating the recurrent costs of a project that is expected to become operational two or three years later, the operating ministry should be guided by the central planning office or ministry of finance in its choice of assumptions concerning these variables, at any point in time. To predict expenditure and revenue the ministries should assume that prices will remain constant at the level prevailing at the time of the budget process. If the cost estimates are disaggregated in sufficient detail, the central planning office or ministry of finance will then be able to make a common adjustment for inflation or wage growth for all the projects currently under consideration. Ultimately, what is important is that common assumptions be used in the estimation of both revenue and expenditure.

III. The Budgeting Process

Two important issues relating to the recurrent cost problem need to be addressed in the budgeting process. First, how should one take account of the recurrent cost implications of projects in choosing the set of new capital projects to be initiated in the current capital budget? Second, how can one ensure that projects already under way receive the appropriate level of recurrent funding at the time they become operational?

1. The effect of recurrent expenditure implications on project choice

Once a project has been described and appraised by the initiating operating ministry or donor agency, the central planning office and ministry of finance must decide whether to recommend its inclusion in the capital budget for the current budgetary year. This decision should be made in the context of a medium-term financial planning exercise, 1/ which takes account both of the factors underlying the growth in revenue and expenditure over a three-year to five-year period and of the government's fiscal stabilization objectives. Such an exercise would allow the financial planner to have some sense of the

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1/ See Peter S. Heller and Michael J. Moriarty, "Financial Planning and Expenditure Forecasting," in Budgeting and Expenditure Control, International Monetary Fund, Fiscal Affairs Department, (Washington, D.C., June 1980), pp. 40-50.

financial context within which alternative development budget scenarios must fit. Two methods may be used to evaluate whether the overall budgetary situation is likely to be tight in the medium term.

(a) Method 1

The elements of one possible financial planning exercise are briefly outlined below. It is the type of approach currently used in the major industrial countries, such as the United States, the United Kingdom, and the Federal Republic of Germany. 1/ The fiscal forecaster needs to examine the likely availability of resources to the public sector, through projections of the different components of tax revenue. This will be based on central planning office projections of the expected trends of aggregate economic growth, external economic developments, the rate of inflation, and taxable capacity.

Several factors will influence the rate of growth of expenditure. Some types of expenditure programs have a built-in dynamic over which the government has only minimal discretion. For example, in the developed countries, indexation provisions and basic demographic factors relating to the growth of different age groups effectively determine the rate of government expenditure on social security, independent of the revenue situation the government is facing. The projected trend in interest rates will affect the cost to the government of any rollover of its debt. Inflation will raise the nominal cost of maintaining the existing real level of public services. Capital projects already in the process of implementation will generate additional demands for recurrent resources which presumably would have to be met, subject to the conditions discussed below. In line with the government's development plan objectives, the budget will have to assure a certain share of its allocations to capital expenditure programs, though the precise share is a policy variable. If the government has a stabilization policy, it may have established the desired level of the budgetary surplus or deficit as a share of total gross domestic product (GDP).

By going through this type of exercise and by subtracting projected expenditure from projected revenue, the fiscal forecaster will obtain some sense of the magnitude of "uncommitted budgetary resources." In principle, the latter measures the amount of resources available for meeting the recurrent expenditure requirements of new capital projects that have not yet been implemented or for expanding existing programs in each subsequent budgetary year. Operationally, for each of the

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1/ See Federal Republic of Germany, Financial Plan, 1979-83 (Bonn: Federal Ministry of Finance, 1980); United Kindgom, Financial Statement and Budget, 1981/82 (London: Her Majesty's Stationery Office, 1981); and United States, Budget of the United States (Washington: Government Printing Office, 1981).

following three years the planner needs to calculate the sum of the recurrent expenditure implications of the capital projects currently under consideration for inclusion in the capital budget. This is set out in Table 3.

How does the sum of these expenditure implications compare with the amount of "uncommitted budgetary resources?" If, after taking account of these expenditure demands, there appear to be additional resources available in a given future budget year, t + n, the budget planner can recommend that the political decision makers:

(1) increase the recurrent expenditure requirements associated with projects coming on stream in year t + n either by increasing the current or future volume of such investment or by choosing types of projects that have higher recurrent expenditure implications;

(2) increase the expenditure on existing programs by expanding staff and/or nonpersonnel inputs;

(3) increase the quantity of capital expenditure in year t + n;

(4) increase the size of the target fiscal surplus in t + n;

(5) leave the resources uncommitted at the present time.

In a more adverse situation, where uncommitted resources in year t + n may be small or even negative, these options define the types of expenditure cutbacks that may be necessary. What is important to emphasize is that present decisions on investment expenditure have to take into account the availability of funds, not only in the present, but also in subsequent periods.

Although this approach may appear straightforward, in practice medium-term financial planning is an extremely difficult and complex exercise. As one moves into the future, be it only for two years, estimates of revenue and expenditure become more and more uncertain, reflecting tentative assessments of the rate of economic growth, inflation, external economic developments, etc. Although in theory one can refer to the level of "uncommitted budgetary resources" in a given year, this concept is very difficult to quantify. Given the inevitable time lags associated with project implementation, many projects under consideration for the current budgetary year may begin to operate only in two or three years, with major maintenance expenses incurred even later.

How does one know whether such projects will or will not pose serious problems for future recurrent budgets? This is all the more difficult to resolve since it is not an individual project per se

Table 3. Comparison of the Recurrent Cost Implications of Ongoing and New Projects with Available Uncommitted Budgetary Resources

	New Budget Year (NBY)	NBY + 1	NBY + 2	NBY + 3	NBY + 4	NBY + 5
Recurrent cost implications of:						
Large projects						
Project 1						
Project 2						
.						
.						
.						
Project N						
Other projects						
Project group A						
Project group B, etc.						
Total recurrent cost implications						
Uncommitted budgetary resources (UBR) 1/						

1/ $UBR = R - G_2 - G_3 - P - I$

where R = revenues, grants, and borrowings, plus net changes in official foreign assets and in government deposits with local financial institutions;

G_2 = current expenditures and transfers for socioeconomic purposes excluding expending on operation and maintenance of uncompleted or new development projects;

G_3 = current expenditure and transfers for other than socioeconomic objectives (central administration, national defense, foreign affairs, etc.);

P = interest and amortization payments on internal and external public debt;

I = capital expenditures.

These definitions are basically drawn from Comité Permanent Inter-Etats de Lutte Contre la Sécheresse dans le Sahel (CILSS)-Club du Sahel, Recurrent Costs of Development Programs in the Countries of the Sahel: Analysis and Recommendations, Working Group on Recurrent Costs (Paris, August 1980), pp. 226-27.

but rather the recurrent expenditure requirements of the totality of projects that are likely to create the problem. The medium-term forecasting exercise can give only some sense of whether a severe constraint on the availability of resources over the medium term is likely to occur and whether this factor should be considered in the formulation of the investment budget.

(b) Method 2

There is another approach that may be used to obtain a sense of the fiscal stringency likely to prevail in the future and to determine whether the recurrent cost problem needs to be seriously considered in formulating the capital budget. Using a model developed by the author (as summarized in the Appendix), 1/ the macroplanner can gauge the extent of the recurrent cost problem by calculating a set of basic parameters, most of which are easily available or reflect the kinds of government policy target readily available in a development plan document.

The parameter specific to the model is the so-called "r" coefficient, which equals the ratio of the annual net recurrent expenditure requirements of the contemplated government investment program in the current year to the value of total government investment expenditure. Using individual project or sectoral "r" coefficients, one can calculate a weighted aggregate r coefficient for the overall public investment program. 2/ This allows for a rough characterization of the overall recurrent expenditure impact of a development program. While useful in a model of this kind, the r coefficient is not as valuable for detailed projections over a two-year to three-year period since variability over time in the recurrent expenditure streams, the effects of inflation, the way in which project revenue streams are taken into account, etc.,

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1/ Peter S. Heller, "Public Investment in LDC's with Recurrent Cost Constraint: The Kenyan Case," Quarterly Journal of Economics, Vol. 88 (May 1974), pp. 251-77. (Hereinafter referred to as Heller, "Public Investment in LDC's with Recurrent Cost Constraint.")

2/ If "r_m" equals the ratio of the net recurrent expenditure commitments to the initial investment expenditure I_m in the m^{th} sector, then the aggregate coefficient r equals

$$r = \frac{\sum_{m=1}^{n} r_m I_m}{I}$$

where I equals the total level of investment. For a further discussion of this coefficient, see Heller, "Public Investment in LDC's with Recurrent Cost Constraint," pp. 252-54, and CILSS-Club du Sahel, Recurrent Costs of Development Programs in the Countries of the Sahel: Analysis and Recommendations, Working Group on Recurrent Costs (Paris, August 1980).

render such a shorthand concept too imprecise. The model also requires assumptions by the authorities with respect to any exogenous factors (inflation, other noninvestment program development, etc.), that may increase the recurrent expenditure budget for development purposes.

Given the above parameters, one can use the formulas of the model to determine (1) the minimal economic growth rate required to generate a sufficient amount of revenues to match the growth of total expenditure and (2) the maximally feasible rate of investment as a share of GDP, given the composition of investment in terms of its recurrent expenditure implications.

If it appears that the necessary economic growth rate is higher than the target growth rate, or that the share of the budgeted investment program in GDP is greater than the maximally feasible share, then there is a strong argument to modify the size or composition of the investment program. To change its composition, the program would have to shift its resources to projects or technologies that reduce the magnitude of the overall recurrent expenditure implications. To change its size, it would have to reduce the absolute level of investment expenditure.

However, such a model does not tell the policymaker which projects to include or exclude. Such a model only gives the policymaker a sense for whether the totality of demand on future budgetary resources exceeds those likely to be available and the degree to which the budgetary constraint is binding. Given the uncertainty involved, it cannot do much more.

Once the policymakers in the central planning office and the ministry of finance have determined that future budgetary resources are likely to be severely constrained, how should this affect individual project decisions? Clearly, the recurrent costs of a project should not be the principal or the only criterion by which a project is accepted or rejected. As noted earlier, many high-recurrent-cost projects may also have very high benefits and may be far more socially profitable than some low-recurrent-cost projects. Project decisions ought to be based on benefit-cost considerations and the character of a sectoral development program. If such project benefit data were available, one could readily take account of the effect of future budget constraints by simulating the effect on a project's net social profitability of various shadow prices for the value of budgetary outlays in future periods. The social profitability of particular projects and the true social cost of their recurrent outlays could then be measured more accurately. 1/ The policymaker would then decide which projects with high recurrent costs are worth implementing.

1/ The existence of such a budgetary constraint itself implies an unwillingness by the government to raise additional taxable resources or to engage in borrowing.

Realistically, the desired approach in terms of cost-benefit analysis may not be feasible for many projects. Even when these cost-benefit data are available, budget decision makers may use other criteria, political as well as economic, to frame the government's budget. Under such circumstances, how should the planners proceed? How should they present the alternative policy scenarios to the ultimate decision makers? First and foremost, they need to ensure that the budgetary implications of the chosen set of projects are reasonably consistent with the available budgetary resources in future periods, while taking account of the other known demands on such resources. If either of the two methods discussed above reveals a serious inconsistency in the supply and demand for future budgetary resources, measures must be taken either to cut down on the future demand or to augment the future supply. This may involve cutbacks in the demand arising from new investment projects, but it may also require reconsideration of the size and growth of existing programs or of projects already under way. This is simply a problem of ensuring reasonable consistency with both future and present budget constraints. One of the useful functions of the data description in Table 1 is that it helps in estimating the likely demand for future budgetary resources from projects under consideration.

Once that estimation has been made, the second and equally relevant issue is how to obtain the optimum set of projects. In the absence of accurate quantifiable measures of project benefits, limited data only will have to provide the best answers. In the search for sound answers, planning officials need to address a wide range of issues normally dealt with in a cost-benefit analysis. For example, with respect to the recurrent cost aspect of this problem, the central planning office and ministry of finance officials in formulating an investment program have several issues to consider.

First, the planning officials must evaluate the vulnerability of a project's output to the availability of recurrent resources. In short, what might be the effect of a 10 per cent cut, for example, in the anticipated recurrent funding on a project? The effect of a 20 per cent cut? 30 per cent? Some projects are likely to be more vulnerable than others to this problem. Again, a project's heavy dependence on expected recurrent funding does not in itself constitute a sound argument for rejecting a project; it is merely one important factor to be considered.

Second, officials must be aware that cutbacks of existing programs or current projects (see Section 2 below) may be the solution to future budgetary disequilibria. The fact that a program or project is currently in operation does not mean that it is socially desirable or that it should have a binding claim on budgetary resources, in the present or the future.

Third, political decision makers have a tendency to be concerned with the degree of sectoral balance in expenditures, particularly in terms of the recurrent budget. Implementation of a particular development program may, in effect, increase the relative share of some ministries. Even if a development program generates recurrent expenditure demands that are consistent with the aggregate availability of resources, is the resulting sectoral distribution of those resources compatible with the perceived "desirable balance" in the distribution of resources across sectors? This also needs to be considered.

Fourth, does there exist the institutional maintenance capacity to service the recurrent expenditure needs of a particular program? If the development budget calls for the construction of a set of roads or buildings, does the ministry of works or the appropriate designated ministry have the equipment and personnel available to maintain the new infrastructure?

Fifth, how will the set of programs affect the skilled manpower constraint? In countries where some forward manpower planning has taken place, one should be able to appraise whether the domestic labor market at the assumed wage rates can satisfy the demands for skilled labor and counterpart personnel arising from completed projects. In countries without such manpower studies, planning officials need to seriously consider the impact of completed projects on the demand for such labor.

Ultimately, all these factors need to be considered in determining the set of projects to be included in the present capital budget. Although economic theory in principle offers an approach to solving this problem in a world of certainty and perfect information, the policy planner in the world of most development planners faces a far more difficult task.

This paper has been deliberately imprecise in its assignment of tasks to the ministry of finance and central planning office with respect to project choice, since the distribution of responsibilities between such ministries differs widely among countries. There is no optimal or preferable arrangement; what is important is that project choice decisions take place in the context of a medium-term financial planning exercise. The former is traditionally the domain of the central planning office, the latter the ministry of finance. Since the ministry of finance will ultimately have to ratify the recurrent expenditure implications of projects in the annual budget, it is critical that there be some interaction between the two agencies, so that the ministry of finance ultimately agrees to accept the recurrent expenditure requirements of completed projects.

2. The recurrent funding of completed investment projects

The final stage in the process relates to the problem of meeting the recurrent expenditure requirements of projects that are currently being implemented.

In principle, the budget execution issues with respect to the management of recurrent funding problem should be neither conceptually nor operationally difficult. In the context of their annual budget review, operating ministries should submit notice that they expect a particular project to be completed during the coming budget year. If a project-monitoring system is available to provide data on the state of project implementation, the finance ministry will already be informed of the position of particular projects; otherwise, the operating ministry will have to provide some means of verifying the progress of the project, presumably with the approval of the ministry supervising the construction of the project. 1/

Once the progress of the project has been verified, funds should be allotted to the sectoral ministry to finance the recurrent costs of the initial operations of the project. Such funds should be released only at the time the project has been completed. Because it is usually very uncertain when a project will be completed during the budget year, there is some justification for keeping such new recurrent expenditure separate from the main recurrent budget; perhaps this could be done by including such funds within the capital budget of the sectoral ministry. This is the practice followed in Swaziland. If the project is not completed, the funds are simply not released; by the same token, they have not been used to simply augment the recurrent budget of the sectoral ministry so that they can be readily diverted into other programs. In the budget year following the implementation and initial operation of the project, the full year's recurrent costs for the project can be added to the recurrent budget of the sectoral ministry. At the same time, the personnel of the sectoral ministry would have to be increased so as to prevent an inconsistency between the available funds and the personnel needed to operate the project.

The problem with this procedure, as described, is that it is excessively mechanistic and does not take into account the reality of past project decision making and the changes that may occur between project initiation and project completion. First, one should not assume that all projects coming on stream actually have been considered in terms of their recurrent cost implications or that their recurrent expenditure demands even have been anticipated.

1/ Occasional spot checks would be necessary to verify the accuracy of the sectoral ministry's account.

There will be many projects that have not been evaluated according to the criteria discussed above; in some cases, the initial advisability of certain projects may seem highly questionable, even though their momentum within the sectoral ministry is such that their withdrawal can scarcely be considered. Second, there will be projects that were indeed considered in light of their recurrent expenditure implications, but whose recurrent expenditure requirements have changed since the time of their implementation. Clearly, inflation is inevitable, but this will be a problem only to the extent that, in real terms, the project's recurrent expenditure requirements impinge on the real budget constraint more severely than originally anticipated. Equally likely are factors relating to underestimation of the recurrent costs at the time of project initiation; that is, past uncertainty as to the nature of labor markets for various types of skilled manpower, uncertainty over the precise character of a project's technology, etc. Third, the budget constraint may be more severe than originally anticipated. Revenues may be less buoyant than expected or nonproject expenditure demands greater. The full funding of the recurrent costs of projects may suddenly involve a higher opportunity cost than originally envisioned and may necessitate cutbacks in existing programs, new investment, or recourse to foreign or domestic borrowing.

The most significant and commonplace problem is the eventual inadequacy of the recurrent expenditure costs and budget scenario anticipated at the time the project is initiated and introduced into the capital budget. In fact, there are obvious incentives for a sectoral bureaucracy to try to augment the putative recurrent costs associated with a project in order to garner additional recurrent funds for other sectoral programs, a problem described earlier.

The dilemma a budget planner faces can be described briefly. In principle, it would be ideal to provide the full, "reasonable" recurrent funding for a project at the time of its completion. However, if budgetary funds are more scarce than originally envisaged, or if relative prices of factors of production have changed, thus raising the recurrent costs of the project, the budget official faces the problem of allocating funds to the new project at the expense of other objectives (investment, the planned deficit, other recurrent expenditure programs, etc.). A detailed evaluation of the recurrent costs of a project needs to be made in the light of the level of recurrent funding provided for other sectoral programs. It is easy to understand how a budget planner is tempted to give short shrift to the recurrent funding of a new project when this funding appears to be at the expense of capital expenditure projects, particularly if the latter use of domestic resources is necessary for the receipt of additional foreign resources.

It is at this stage that the budget planner must effectively evaluate the trade-off between the costs of underfinancing a project and the future benefits associated with a new capital project or the present benefits associated with other existing recurrent expenditure programs. The difficulties in making such an evaluation are obvious. When faced with this dilemma, one approach for the ministry of finance officials consists of going back to the sectoral ministry with an augmented, though insufficient, recurrent budget ceiling and forcing the budget planner in the sectoral ministry to determine where the paring in the sectoral budget should occur. Alternatively, periodic appraisals of existing programs (say, every three to five years) could be made, so as to provide the ministry of finance officials with the background and analytical basis for choosing among these budget alternatives. There might also be some merit in establishing a system whereby the actual recurrent costs of a project are routinely compared with its original projections.

This dilemma highlights the importance of the planning process at the project initiation and budget planning phases of project deliberations. It suggests the need for ample budgetary margins in planning, i.e., all budgetary resources should not be fully committed in the medium term.

IV. Conclusions

There are no simple rules for budget officials to follow to easily take account of the recurrent costs of projects in the budgeting and planning process. This paper attempts to alert budget officials to some of the common problems that arise in dealing with recurrent costs and to focus their thinking on certain key principles that must be followed. Most important is the need to take account of future budgetary constraints in the present consideration of projects.

APPENDIX

A Simple Model for Evaluating the Overall Implications of the Recurrent Costs of a Development Program

The model referred to in Method 2 of the text relies on the calculation of the following basic parameters: 1/

(1) t = the share of domestic revenue in GDP;

(2) a = the share of general public service expenditure in GDP, (e.g., expenditure on internal security, external defense, foreign affairs, and the administration of justice, the legislature, etc.);

(3) x = the share of total investment financed from domestic resources;

(4) d = the target share of government investment in GNP;

(5) r = the ratio of the annual net recurrent expenditure requirements of the contemplated government investment program in the current year to the value of total government investment expenditure;

(6) e = the elasticity to GDP growth of domestic revenues; 2/

(7) l_1 = projected growth rate of public investment;

(8) l_2 = projected growth rate of general public service expenditure;

(9) c = percentage change in existing recurrent expenditure owing to exogenous factors (public sector wage rate, desired improvements in quality);

(10) l = the target growth rate for GDP.

The minimal economic growth, 1*, required to generate a sufficient amount of revenues to match the growth of total expenditure may be calculated as

$$l^* = \frac{a(l_2 - c) + d[x(l_1 - c) + r] + tc}{te} \qquad (1)$$

1/ See Heller, "Public Investment in LDC's with Recurrent Cost Constraint."

2/ This model was formulated under the assumption that revenues are principally determined by the growth of GDP. Clearly, in economies that are based substantially on export, an alternative formulation of the model would be necessary.

The maximally feasible rate of investment as a share of GDP, d*, given the composition of investment in terms of its recurrent expenditure implications, equals

$$d^* = \frac{l(te - al_2) - (t - a)c}{(r + (xl_1) - xc)} \qquad (2)$$

The maximally feasible investment share d* may be compared with the planned investment share d in order to test the feasibility of the development program in terms of its recurrent expenditure implications. Alternatively the minimally required economic growth rate l* may be compared to the targeted growth rate l for the plan period.