

Precept 9. Efficiency and equity of public spending

Technical Guide

1. Introduction: Objectives, Trade-offs and General Principles

A good test of success in improving public spending is what happens to growth rates once a resource boom ends. Following the previous boom, growth rates in resource-rich countries collapsed, suggesting that the windfalls were not effectively harnessed. It does not have to be this way. Mauritius used to be a low-income country dependent upon the export of sugar. In the mid-1970s it gained a brief windfall from a global sugar boom and succeeded in converting part of the savings into investment for diversification. This helped to lay the foundations for the country's transformation (Greenaway and Lamusse, 1999). The government of Malaysia did the same with savings from the commodity boom of the late 1970s. Its diversification into light manufacturing, through the creation of the industrial cluster in Penang, has transformed the economy (Yusof, 2009). In Uganda, the brief coffee boom of the mid-1990s financed and stimulated private investment in transport equipment. This helped to integrate rural and urban markets and contributed to sustaining growth beyond the boom (Reinikka and Collier, 1999).

This Precept first outlines the objectives, trade-offs and general principles involved in increasing the efficiency and equity of public spending. It then describes the process of public project management, feasible ways to reduce the cost of public capital good provision, using public investment to encourage private investment, and finally, problems associated with recurrent public spending.

Objectives

The central task facing the government is to raise the capacity for effective spending. A resource-rich developing country is likely to have a concentration of revenues accumulating to government, implying, on average, a larger state than equivalent non-resource rich developing countries. Public revenues are large and so the ability to harness natural resources for development turns on the ability to spend public money well. Typically, the initial difficulty for resource-rich governments in low-income countries is that the public sector lacks the capacity to spend large amounts

of money efficiently. The civil service has no experience of either high levels of spending or a sustained high rate of spending growth. Hence the central task facing government; a significant increase in the rate of growth of public expenditure is needed in order for resource revenues to be absorbed domestically.

Raising the efficiency of investment spending is both more difficult and more important than raising the efficiency of recurrent spending. It is more difficult because, as discussed in Precept 8, the revenues from natural assets should be used disproportionately, though not exclusively, for investment. Because spending should be skewed towards investment, the needed increase in the rate of growth of investment spending will be much greater than that of recurrent spending. This alone would make scaling up public investment more challenging than scaling up recurrent expenditure. The difficulty is compounded because the efficiency of investment spending is dependent upon a wider range of considerations. While more difficult, the task is more important, since it determines the pace at which the economy will grow.

At the simplest level, a significant increase in public investment involves a reallocation of the civil service towards the selection, design, implementation and evaluation of investment projects. A large public investment program cannot be run with the same staff as that appropriate for a small one.

For a country faced with a significant increase in investment requires governments to help raise the '*absorptive capacity*' of the economy. This process of 'investing in investing' implies three major changes. The first is the improved management of public investment; the second is the reduced unit cost of capital goods; and the third is policy changes which increase the returns on private capital in the economy (this is covered further in Precept 10). In combination, these activities aim to raise the efficiency of investment and increase the overall absorptive capacity. This allows the economy to effectively absorb and deploy the increased foreign exchange generated by resource exports. The implication of an initially low absorptive capacity is not that investment should be low, but that *investment in the process of investing* should be high. The three component parts of investing-in-investing, discussed in Section 2 below, constitute the necessary preliminary groundwork for the more prolonged period in which the high savings from resource revenues are used gradually to accumulate productive capital.

Whatever the chosen project, there is also a case for setting employment generation as a goal in itself, as discussed in Section 2.

Trade-offs

Until capacity is raised there is a case for using revenues to accumulate foreign assets. (see Precept 8). However, at best, this merely buys time during which capacity can be built. Accumulating foreign assets or deferring extraction without using this time to rectify capacity constraints merely defers development. Building capacity may unavoidably require a phase of learning and improvement in which increases in spending lead to increases in the efficiency of spending. If a phase of mistakes in public spending is indeed unavoidable then it is simply part of the costs of structural change; it is not a reason for accumulating foreign assets. Of course, this is not an argument for expanding spending regardless of its content; there is a key difference between mistakes that are the unavoidable but temporary consequence of a learning process and mistakes that are merely due to poor systems of public management.

A significant increase in public spending poses severe risks of deterioration in the quality of spending. The default option is that ministries simply move further down their list of priorities so that the additional projects are inferior to existing projects. Furthermore, as the rate of spending increases managerial oversight is liable to deteriorate. For example, at the onset of the first oil boom the Nigerian government decided to purchase cement for infrastructure projects, but its procurement process collapsed into disorder, resulting in the infamous ‘cement Armada’ that clogged Lagos harbor.

However, while the rapid expansion of public spending exposes the government to these risks, it also provides the opportunity for radical improvements in systems of public spending. The management of the increase in public spending is critical. The value of investments that are undertaken to offset the depletion of natural assets depends not upon their cost but upon their productivity. Even if a high proportion of resource revenues are invested, if the investments are badly chosen, or badly executed, society will have wasted its unique opportunity for transformative development. If the overall quality of public spending collapses the additional spending will not merely be wasted but will be counterproductive, whereas if quality radically increases, society reaps a double benefit from resource revenues: *bigger* spending is reinforced by the bonus of *better* spending.

Decision makers may also want to allocate part of the increase in public spending to improving the efficiency and equity of existing spending. Reform often requires headroom, whether that is for transition payments, investment in more efficient assets or improvements to control systems and human capital. The availability of

increased spending can be used as an opportunity to make a step change in the quality of outcomes from existing spending.

General Principles

In achieving the objectives and managing the tradeoffs described here, the proceeding principles should be followed:

- **Growth promotion.** Increases in public spending should be targeted at publically articulated and growth-promoting policy objectives. These should be subjected to some technical process of assessment, whether cost benefit analysis or comparison with the investment path of countries that have successfully made the desired transition. Spending plans should also be assessed for their macroeconomic consequences.
- **Competitive tendering.** Open competition and tendering should be required for all material public procurement contracts.
- **Control and audit.** A proportion of the increase in public spending should be allocated to improving systems for the control of spending and the independent audit of its efficiency and effectiveness.
- **Transparency.** Spending plans and objectives should be made transparent to public scrutiny along with reporting of actual outcomes.
- **Avoid tariffs.** Tariffs on capital goods should be avoided.
- **Public scrutiny.** A well-functioning system of public accountability has both *ex ante* and *ex post* scrutiny by citizens and their representatives as well as public service professionals themselves.

2. Design and Implementation

To fulfill the objectives of this Precept, governments must *invest-in-investing*. This process incorporates four actions:

- improve the management of public investment;
- reduce the unit costs of capital goods ;
- enhancing the policy environment for investing so as to increase the returns on capital in the economy; and
- improved efficiency in recurrent public spending.

Managing Public Investment

The process of managing public investment involves four components:

- Project selection
- Project design
- Implementation
- Evaluation

Project Selection. The conventional method to select investment projects is to quantitatively measure the costs and benefits of each project and choose those with the greatest net benefit, a process called *cost-benefit analysis*. However, this approach has two major drawbacks:

- First, it requires a lot of skilled preparation. In many low-income countries the civil service has no realistic prospect of acquiring sufficient expertise to do cost-benefit analyses on all prospective projects. If the analysis is only done selectively, then it opens the door for those projects which have political support but no economic justification to be given dispensation from the analysis, defeating its purpose.
- Secondly, even where cost-benefit analysis is feasible, it may systematically give the wrong answers for some types of project. The method is best-suited for projects that generate only small changes, and that do not have widely-dispersed and hence unquantifiable benefits. Yet the purpose of a significant increase in investment is transformative, taking the economy from a structure which is probably typical of low-income countries to one that is similar to middle-income countries. Further, large public infrastructure projects, and projects in network activities typically have wide-ranging benefits.

For these reasons, the cost-benefit analysis of projects, while a useful part of the overall project selection process, is unlikely to be the overarching solution. For example, the Standing Advisory Committee on Trunk Road Assessment of the British Government, while using cost-benefit analysis, recognizes that it biases results against transformative projects. It therefore increases the estimated benefits of all trunk roads by 30 percent, which, although arbitrary, recognizes the importance of unquantifiable effects.

A cost-benefit analysis relies on using information relevant to the current economic environment. However, this may lead to systematic underestimation of projects with significant spillovers or the potential to radically transform the economy. A

completely different and complementary approach is to start with a view of the future, transformed economy, and work back from there along the implied path necessary to get from where the economy is to what it will become. The risk with such an approach is that aspirations get the better of realism, leading to plans which are never implemented.

A way to guard against this bias is to base the view of the future on the structure of the public capital stock in economies that are already mainly middle-income. Of course, not all middle-income economies have the same structure of their public capital stock. But it should be possible to find several middle-income economies which are credible models for what any particular resource-rich, low-income economy would look like after two decades of rapid growth.¹ After all, the appropriate objective for a resource-rich, low-income economy is indeed to harness its natural assets in service of transformation from a low-income economy to middle-income one over the course of a generation.

These topics are covered further in Precept 10.

Such a comparison can provide benchmarks for important unknowns such as energy demand, road, rail and air traffic, and enrolment in tertiary education. In turn, these imply appropriate levels of the public capital stock: the generating capacity, transport infrastructure, and universities which will be needed two decades hence. A path that smoothly takes these capital stocks from their current levels to the required levels can then help to guide public investment. There will sometimes be an obvious reason for deviating from these smooth growth rates; it may make sense to sequence the accumulation of infrastructure, for example, road infrastructure may be accelerated ahead of power generation until the economy is more urbanized, since roads are at a premium relative to power. But these are essentially refinements within a framework. Such an approach is likely to be more feasible than a project-by-project cost-benefit analysis, and on the strategic issues may well give more reliable results. The cost-benefit approach can then be used to complement the information from international benchmarking, guiding project choices within categories.

¹ As to what rapid rate of growth is realistic, typically a rate of 7 percent is a reasonable goal for a resource-rich economy: this was the bottom cut-off for the 13 successful transformations from low-income studied by the IBRD Commission on Growth and Development.

Project Design. The costs and benefits of each project can be influenced significantly by its design, and the construction process itself. For example, a potentially important side-benefit from investment in infrastructure is the generation of wage jobs in the construction sector. These can employ less-educated young males who are the prime risk group for criminality and violence. The number of such jobs generated by a given investment in infrastructure depends upon the labor-intensity of the construction process. As noted earlier, there is a good case for setting employment generation as a goal in itself.² However, whether labor-intensive modes of construction are appropriate depends upon the ability to maintain the infrastructure once it is built. Typically, more capital-intensive modes of construction require less maintenance. Serious weaknesses in maintenance are one reason why the public capital stock is often so inadequate in low-income countries and also why capital-intensive construction methods are preferred. Hence, the appropriate design of projects for job generation is contingent upon addressing the problem of maintenance. Strategies such as the earmarking of revenues may help to overcome systematic political biases that lead to the underfunding of maintenance budgets.

As discussed in Precept 8, in resource-rich economies it is appropriate for investment to be volatile, increasing during periods when revenue is high and being scaled back when expenditure needs to be squeezed. Potentially, project design can be a bottleneck to the rapid expansion of public investment when rising revenues make rising investment appropriate. To ease this bottleneck a stock of properly designed projects can be built up during periods of low investment which can then be drawn down during periods of high investment.

Project Implementation. Public investment projects are often idiosyncratic and thereby exposed to corruption and over-pricing. Competitive tendering guards against some malpractice but remains open to abuse through revisions of terms once the contract has been awarded. A corrupt company will bribe an official to change the specifications for the project once it has been awarded, receiving inflated compensation for this change, which enables it to win the contract with a low bid and yet reap excess profits. To guard against this abuse it is necessary to have transparency in the process of contract revisions, scrutiny by independent cost

² Technically, a cost-benefit analysis of the project would warrant setting the 'shadow' wage below the actual wage.

accountants, low limits on the value of changes to specifications that are permitted without high-level authorization, and multiple veto points for authorization.

Even though external public finance may be unnecessary, it may nevertheless be helpful to involve the international development agencies as partners in projects. The agencies have long experience in project supervision, and research finds that good supervision by these agencies improves the success rate of projects. This is especially true in environments where domestic implementation capacity is weak, such as post-conflict situations (Chauvet et al. 2009).

Evaluation. In the context of acute scarcity of skilled staff, evaluation cannot be a priority. Resources are likely to be better used strengthening implementation. However, it may be possible to substitute for the lack of evaluation through other approaches. Evaluation serves two functions: it enables the system to learn, and it acts as a deterrent. Both of these functions can be ‘outsourced’ if there is sufficient transparency. An active civil society and a free press will bring to light major failures and successes and this public revelation will both inform public sector decision-taking and deter behavior likely to lead to project failure.

A useful new tool for benchmarking the efficiency of public investment processes is the Public Investment Management Index (PIMI) of the IMF.³ It compares the efficiency of the process for 90 countries. The data are available not only as an overall assessment, but for each of the four stages of the public investment process: project selection, project design, implementation, and evaluation. This benchmarking is helpful in identifying which stages are particularly weak in a country, in setting realistic goals for improvement, and for monitoring whether these goals are met.⁴

³ See <https://agidata.org/Site/SourceProfile.aspx?id=14> for the Index data. Dabla-Norris et al. (2011) for an introduction of this material.

⁴ The PIMI only started in 2011 so there has been little research on it. However, preliminary analysis by the IMF suggests that correcting estimates of the public capital stock by it (rather than just summing past investment), increases the accuracy of the relationship between public capital and GDP (Dabla-Norris et al., 2011).

Reducing the Unit Cost of Capital Goods

Typically in resource-rich, low-income countries the unit cost of capital goods is higher than global norms. This reduces the efficiency of both public and private investment. Appropriate public policy can reduce these costs.

Capital goods are of two types: equipment and structures. Generally in small, low-income economies equipment is imported, whereas structures have to be produced domestically by the construction sector. Both equipment and structures tend to have high unit costs although the reasons for this are quite different for each.

Equipment. If equipment is imported, the two components of its cost that are within the country are trade barriers and distribution channels. Trade barriers, notably tariffs, are directly under the control of government and so can be eliminated. Tariffs on capital goods may actually be harmful. Firstly, by increasing the cost of investment they contribute to a reduction in private investment. Secondly, by increasing the prices of goods in the country, they reduce the actual amount of goods that can be bought with the revenue from the tariffs. The direct revenues from tariffs accruing to the customs service are offset one-for-one by reduced domestic currency revenues from resource exports (Collier and Venables, 2009a). Hence, tariffs on capital goods should be avoided.

Distribution channels of imported capital goods in small, low-income countries are likely to be characterized by monopolies and cartels. Recent research suggests that the small market size of many low-income economies systematically elevates the price of equipment (Collier and Venables, 2009b). To an extent this problem is self-correcting; as investment increases the market for equipment expands attracting new entrants into distribution channels, so that cartels tend to fall apart. However, these automatic effects can be reinforced by active policies to encourage new entrants. One approach is to simplify the process by which businesses are established. A complementary approach is to enlarge the market by integrating regionally, removing the non-tariff impediments to region-wide marketing of imported equipment.

Structures. Structures are the main form of investment by both government, which invests predominantly in infrastructure, and households, which invest predominantly in housing. Structures cannot be imported; they are produced by the construction sector. Typically, in small economies with a long history of low investment, the construction sector is often small and cartelized. A rapid expansion

in the demand for structures, triggered by increasing the rate of public investment, is liable to create a construction boom in which the unit costs of additional construction rise sharply. If this happens, much of the extra expenditure on investment in structures is dissipated as part of the extra expenditure is used to meet these higher unit costs. However, since all construction output is priced at approximately the cost of incremental output (prices are set at marginal cost), the extra expenditure pays not just for extra output, but for the higher price of output that would have been produced even without the boom. These extra payments are 'rents', and so the rents from resource extraction get shifted to the construction sector where they accrue to companies. These high rents are often accompanied by corruption; infrastructure projects are idiosyncratic and so highly subject to corruption. The new Construction Sector Transparency (CoST) Initiative⁵ is currently attempting to bring to the construction sector equivalent defenses against corruption that the EITI brings to natural resource extraction⁶. Further, to the extent that extra spending is dissipated in higher unit costs it fails to generate employment. It is therefore critical that extra expenditure on investment in structures should generate as much extra output of structures as possible.⁷

The easiest way to do this is to hand over construction projects to construction firms that import the entire process, including labor. However, this is normally not ideal because it fails to generate local employment. The link from construction through to employment is potentially one of the fastest ways by which natural resource revenues can benefit ordinary people. Hence, often the better approach is to lower the unit costs of domestic construction. By thinking along the production chain of the typical structure it can usually become apparent which points are the major bottlenecks and how they can be addressed by policy. The government of Botswana, which successfully harnessed its natural resources, had an annual plan for the construction sector as part of which it consulted firms to check for bottlenecks, establishing how planned government projects could be implemented without excessive cost.

Starting at the beginning of the supply chain, a structure requires land on which to build. This is sometimes difficult to acquire because the legal framework is unclear

⁵ See <http://www.constructiontransparency.org/>

⁶ See <http://eiti.org/>

⁷ In technical terms, the policy problem is that the supply curve of construction services is likely to be steeply sloping, and the policy objective is to flatten it: the elasticity of supply of construction services should be increased.

or unhelpful. Simplifying and speeding up legal rights to land can help to reduce the costs of expansion. A structure requires material inputs such as cement which can easily become subject to bottlenecks. Policy can address such bottlenecks both by easing imports, for example by investing in port infrastructure as a priority, and by encouraging investment in domestic production of cement (though encouragement should not be by means of tariffs which would defeat the objective of lowering the unit cost of cement). Construction requires some skilled labor: typically after years of little construction activity these skills are in short supply domestically, while importing the more mundane skills is very expensive relative to the underlying cost of training people. Hence in the sequence of priorities, investing in training facilities for construction skills should probably be an early component of 'investing-in-investing'. Finally, construction needs firms to provide the organization. It is important to expand the pool of construction firms so as to break cartels. During its process of consultation with the construction industry, the government of Botswana found that the size of its projects was too large for local firms to handle. In response, it split projects into smaller contractual units so that local firms could participate and gradually grow.

Enhancing the Policy Environment for Investment

Since private and public investments are complementary, it is essential that the additional investment appropriate for a resource-rich country should be spread across both of them. However, although the government can directly increase public investment, it can only increase private investment *indirectly* by adopting policies that raise the private rate of return (see also Precepts 3 and 10).

The policy which most directly affects the rate of return on private investment is corporate taxation. There is thus a case for a resource-rich economy to adopt relatively light taxation of companies other than those in the resource-extraction sector. However, since this is a costly policy it should be balanced against other policies which do not sacrifice revenues. There are now several useful guides that assess details of national economic policy on the criterion of whether they are investment-friendly, examples being the *Doing Business* survey of the World Bank and the ratings of the *International Country Risk Guide*, and *Institutional Investor International*. Since each of these assessments has its limitations, it is best to use a range of them. An advantage of these ratings is that, since they are revised annually, policy makers can rapidly monitor progress.

Recurrent Public Spending

Efficiency is often problematic in recurrent public spending. The reason that some activities fall under the public sector is that provision through the market is not appropriate, but a consequence of this is that the discipline that market mechanisms provide is not available.

Achieving efficiency in public service delivery requires good decision making over the entire process chain. This in turn depends upon a combination of the information available to decision-takers, their intrinsic motivation, and the incentives they face. In recent years there have been major advances in understanding these issues. Some governments have adapted the design of their delivery systems to incorporate new thinking while others have yet to do so. Globally, there is surprisingly little relationship between government expenditure on basic services and the actual level of service delivery which suggests that most governments are far from best practice.

Improvements in efficiency can be attempted at any time. However, a significant increase in the amount of money available for public services makes efficiency more important and represents a good opportunity for improvement. Greater efficiency will inevitably meet resistance from vested interests, but resistance is likely to be lower at a time of expansion.

This section now focuses on how the efficiency of public service delivery can be increased. The answers are not simple; if they were then most governments would already be at best practice. Because effective change is complicated, dogmatic approaches are liable to go wrong. The right approach is to experiment and evaluate, scaling up successful experiments, where feasible, and abandoning failures.

Overall Resource Allocation. Improving efficiency depends upon solving two distinct types of problems of relationships between different public and private sector groups (technically called *agency problems*). The first is the overarching issue of the amount of resources to be devoted to the activity and the allocation of those resources across service-providing units.

Since the source of finance is not the clients of the service, there is an almost inevitable separation between the people who are the beneficiaries and the people who meet the costs. Hence whoever takes the allocation decisions cannot fully internalize these costs and benefits. This is a highly political decision which may go wrong because of imbalances in political influence. The more widely spread the benefits of a particular type of public spending are the more severe is the problem of

groups enjoying the benefits of spending without facing up to the costs (the *free-rider problem*) and so the weaker will be the lobbying pressure for it. Benefits which accrue to a small, cohesive group will be supported by strong lobbying.

The problem of differential lobbying can be reduced by placing each individual spending decision in a larger and transparent decision process such as a Medium Term Expenditure Framework, the terms of which are set – and adherence to ensured – by the highest authority in government. This requires political leadership from the very top of government, with transparent and clear channels of accountability. By packaging individual decisions together, lobbies to some extent neutralize each other, and the issues become sufficiently important to attract the attention of ordinary citizens. Powerful lobbies thrive on small, sequential decisions taken in secrecy.

Productive Efficiency. The other agency problem is the production issue of how to maximize the output from given inputs within each service delivery unit. The production decision will always be taken by the people employed in the service-providing unit. Their direct personal interest need not coincide with either beneficiaries or those who meet the costs and may indeed radically conflict with those interests.⁸

In a well-functioning system, scrutiny of public spending can operate in multiple ways. Partly, scrutiny is designed to achieve honesty, and partly it is designed to achieve efficiency. A second distinction is between systems designed for *ex ante* scrutiny, which is about how decisions get authorized, and those designed for *ex post* scrutiny, which is about evaluation. A third distinction concerns who is performing the scrutiny: some top-level authority, citizens or their representatives, peer groups, or the workers themselves. The three types of distinction are brought together in Table 1 which gives examples of each of the sixteen resulting mechanisms of scrutiny.

A well-functioning system of public accountability has all of these mechanisms. However, the balance between them can vary according to the needs and opportunities of each situation. The schema provides a check-list against which an actual system can be evaluated.

Table 1: A Classification of Monitoring

⁸ An excellent coverage of this subject is the World Development Report, 2003: Making Basic Services Work for Poor People.

<i>Purpose and Timing of scrutiny</i>	<i>Top-down</i>	<i>Bottom-up</i>	<i>Peer Group</i>	<i>Internalized</i>
Honesty: ex ante	International competitive tendering required for public investment projects	Civil society scrutiny of public spending	Norms set by an association of peers	Opportunities for corruption resisted due to integrity
Honesty: ex post	Audit by Auditor General	Exposure of public corruption in the media	Peer group disciplinary processes	Guilt and regret induce confession and restitution

Efficiency: ex ante	Cost-benefit analysis of proposed projects	Parliamentary approval of budget, and PRSP consultations	Presentation of spending plans by ministers in cabinet	Pride in skill induces high effort
Efficiency: Ex post	Evaluation of completed projects	Comparison of benchmarked performance in media	Comparison of examination results among headmasters	Failure induces an effort to learn from mistakes

Each of the mechanisms depicted in Table 1 is liable to face limited information, but the other problems they face are likely to differ. This may make different mechanisms complementary. For example, simply closing off a single possibility for agents to game the system may merely shift opportunism to the next best option. Accountability may be as effective as its weakest link and so benefit from a coordinated effort to raise standards.

Without a market to provide competitive pressures, governments must use other mechanisms to introduce incentives for efficient service delivery. If different agencies compete to supply the same service, their relative performance constitutes a useful measure, a process termed *yardstick competition*. There are three distinct steps. The first is organizing service delivery in such a way that different agencies have sufficient autonomy for performance to vary significantly due to their own

decisions. The second is to gather information that enables a comparison of performance to be made. The third is to disseminate that information to the pertinent principals: for example, school league tables by value-added in examination performance can be constructed and shared with parents.

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