I Overview

A country with large exhaustible resources such as oil can benefit substantially from them, but the revenues from exploiting these resources can pose challenges. Fiscal policymakers need to decide how expenditure can be planned and insulated from revenue shocks arising from the volatility and unpredictability of resource prices. Decisions also need to be made on the extent to which resources should be saved for future generations.

In some countries that are dependent on the export of oil and other nonrenewable resources, governments have established, or are considering setting up, nonrenewable resource funds (NRFs) to help in the implementation of fiscal policy. Recent increases in oil prices have lent importance to this discussion in several countries.

NRFs can take various forms, ranging from separate institutions with discretion and autonomy to funds that in practice amount to little more than a government account. The general justification for such funds is that some share of government revenues derived from the exploitation of a nonrenewable resource should be put aside for when these revenues decline, because the price of the resource has fallen, or the resource has been depleted or both. *Stabilization* funds aim to reduce the impact of volatile revenue on the government and the economy. *Savings* funds seek to create a store of wealth for future generations.

In what follows, the operational implications and effectiveness of NRFs are considered under the following headings.

Policy Implications

Countries that rely on oil and other nonrenewable resources for a substantial share of their revenue face two key problems: the revenue stream is uncertain and volatile, and the supply of the resource is exhaustible. These problems raise several challenges for fiscal policy and for economic policy more generally.

- Instability in fiscal revenue complicates fiscal management, budgetary planning, and the efficient use of public resources. Large declines in revenues often cause sharp cuts in expenditure, which is disruptive and costly. Increases in revenues may lead to the temptation to raise spending to unsustainable levels, and to pay insufficient attention to the quality of projects.
- The difficulty of distinguishing temporary from permanent shocks further complicates fiscal management. Empirical evidence suggests that prices may have no well-defined time-invariant averages and that shocks are persistent.
- Government revenue derived from the exploitation of nonrenewable resources differs from other revenue in that it partly represents a depletion of wealth. This suggests that some of this wealth should be saved—both to help achieve long-run fiscal sustainability, and for intergenerational equity.
- Large fluctuations in resource revenues may give rise to real exchange rate volatility, and increases in these revenues may lead to "Dutch disease." There are also sometimes concerns that large revenue inflows may be misused or otherwise subject to poor governance.

Funds and Their Rationale

Some countries have turned to NRFs to help address these issues. Typically, the objectives of such funds are to reduce the impact of volatile revenue on the government and the economy, to save for future generations, or both. The conceptual basis for these funds needs to be viewed with caution.

- Stabilization funds seek to shield the budget from revenue uncertainty and volatility. In the absence of liquidity constraints, however, NRFs provide no direct mechanism to stabilize expenditure. Since resources are fungible, governments could bypass the operation of NRFs by financing spending in other ways. Expenditure smoothing therefore requires additional fiscal policy decisions besides the operation of the fund. Moreover, price or revenue rules, which signal the need to accumulate or with-

draw assets from the fund, may be difficult to establish.
- NRFs designed to save for future generations face some of the same problems. If there are no liquidity constraints, such funds would not necessarily lead to higher saving, since the government could finance spending by borrowing. In addition, if a savings fund spends on investment items, financial saving is reduced.
- "Financing funds" require that the NRF finance the fiscal deficit (its resources permitting) and receive the surplus. A financing NRF provides an explicit link between fiscal policy and asset accumulation, and it addresses fungibility issues. It does not attempt to deal directly with the problems posed to the budget by the volatility of resource revenues, however, and is most likely to function effectively when fiscal policy operates in a sound medium-term framework.
- The policy objectives of NRFs could, in principle, be achieved through implementation of sound fiscal policy within the context of a medium-term budget framework. Such a framework can help countries with highly volatile revenues design stable expenditure policies. Recourse to commodity risk markets may, in some cases, reduce the uncertainty and volatility of the revenue stream.
- The establishment of NRFs may be justified on political economy grounds. Such funds may help the government to resist spending pressures if there are constraints on borrowing. These may reflect explicit fiscal rules or may arise from political difficulties in issuing debt. In this case, by formally limiting the resources available to the budget during upswings, funds could help to prevent large increases in spending. Large or rapidly growing NRFs, however, may themselves give rise to spending pressures.

Operational Aspects of Funds

Resources available to an NRF may be large, lending importance to the way its operations are integrated with the budget; the management of the assets; and to issues of governance, transparency, and accountability.
- NRFs should be coherently integrated within the budget process to maintain a unified control of fiscal policy and to avoid problems in expenditure coordination. A virtual fund (essentially an accounting mechanism within the budget), where there is no separate institutional structure for the management of the fund and all revenues and expenditures are on budget, could help to preserve the political economy advantages of an NRF without loss of fiscal control.
- If a separate institutional structure for an NRF is established, it would be preferable for transfers to the NRF to go through the budget. In any event, any spending from the fund should be subject to parliamentary approval, budget formulation and reporting should focus on a consolidated presentation, and the treasury should execute all expenditures.
- An NRF should have a clear asset-management strategy that is coordinated with other government financing operations. A strong case may exist for placing the fund's assets abroad, since investment in domestic nongovernmental financial assets would transmit resource volatility to the economy. Specific operational asset-management guidelines should govern the allocation of the fund's resources.
- The rules and operations of an NRF should be transparent and free from political interference. This requires regular and frequent disclosure and reporting of the principles governing the fund, its inflows and outflows, and the allocation and return on assets. The NRF's activities should be subject to independent audit and evaluation of investment performance.

How Effective Are Funds?

The effectiveness of NRFs was assessed by using both econometric evidence and country case studies. Limitations on the availability and quality of the data, and the small sample, warrant caution in interpreting the results.
- The econometric evidence suggests that in some countries with NRFs, expenditure has tended to be less correlated with changes in nonresource export earnings than in those without funds, although this experience is not uniform. It also indicates, however, that for countries with NRFs the establishment of a fund did not have an identifiable impact on government spending.
- This finding may suggest that countries with more prudent expenditure policies tended to establish an NRF, rather than the NRF itself leading to increased expenditure restraint. It could, however, be argued that the establishment of a fund may have helped to maintain cautious policies in the context of ongoing revenue variability.
- Country experience suggests that the behavior of prices and the issue of fungibility pose substantial problems for the operation of the NRFs. In several cases, the integration of the fund's operations with overall fiscal policy has proven

problematic, and despite the operation of a fund, the stabilization of expenditure has remained elusive. Moreover, there is evidence that funds may have been most difficult to operate when the extent of reliance on resource revenues has been largest.

This paper examines whether funds can help countries pursue good macroeconomic, and especially fiscal policies, and consequent design issues. It does not aim to address directly the issue of what macroeconomic and fiscal policy should be for a country with large nonrenewable resource endowments, which is a major topic that has been extensively covered elsewhere.[1] Although the focus is largely on oil-producing countries, examples are drawn from, and much of the analysis is relevant to, other nonrenewable resource-producing countries under appropriate circumstances.

[1]See, for example, Gelb and associates (1988) and Engel and Meller (1993). Also, this paper does not discuss issues of fiscal federalism that may arise in nonrenewable resource-producing countries.