I Introduction

Andrew Berg, Shekhar Aiyar, and Mumtaz Hussain

Aid facilitates a transfer of resources from donor to recipient countries that enables the recipients to increase consumption and investment. It thus presents an opportunity to reduce poverty, increase the standard of living, and generate sustained growth. However, the effective use of increased aid also presents challenges. Good projects must be found and managed, and conditions for budgetary support must be agreed upon and implemented. The imperative to use the funds well can strain the administrative capacity of recipient governments. In addition, aid flows can weaken country ownership of economic and social policies.

Related to, but distinct from, these microeconomic and institutional issues are the macroeconomic challenges of managing aid. High levels of aid inflows can cause upward pressure on the real exchange rate, to the detriment of the exporting industries that may be critical to long-run growth. This is fundamentally rooted in the real effects of aid and hence is a microeconomic issue in nature. But in the short run, macroeconomic policies can determine how aid is absorbed in the domestic economy. Aid inflows can also create problems of fiscal management and debt sustainability, particularly when they are volatile and when they come in the form of debt.

Aid to low-income countries has increased somewhat over the past 10 years. In a few relatively well-performing low-income countries, aid inflows have increased substantially from what were already significant levels. Larger and more widespread increases in aid inflows are seen as critical to achieving the Millennium Development Goals (MDGs).[1] A scaling up of aid will amplify the macroeconomic policy challenges arising from the management of aid inflows. In its capacity as a key macroeconomic policy advisor, the International Monetary Fund (IMF) needs to help low-income countries confront these challenges squarely. Helping countries effectively manage the macroeconomic impact of increased aid inflows would be one of the IMF's main contributions toward the achievement of the MDGs.

This study attempts to identify and analyze some of the key macroeconomic issues that arise in connection with high levels of aid inflows. The focus is first on developing a framework that will aid economists—both from within and outside the IMF—in studying the policy questions that arise from the scaling up of aid. The framework is then applied to five countries that experienced large inflows in recent times. The questions addressed include the following:

- Do recipients of aid surges encounter macroeconomic absorptive capacity constraints?
- Is Dutch disease a real concern? That is, do aid surges lead to real exchange rate appreciations that are harmful to the export sector and hence economic growth?
- How should fiscal policy be adapted to aid surges?
- Are aid inflows inflationary, and what is the appropriate monetary and exchange rate policy response? Is there a role for sterilization?
- Have programs supported by the IMF's Poverty Reduction and Growth Facility (PRGF) adequately managed the macroeconomic impact of surges in aid inflows?

This study complements existing work in two ways. First, it develops a framework to examine nuts-and-bolts policy questions of direct relevance to the design of IMF-supported programs, and more generally, to macroeconomic policymakers. Second, it systematically analyzes cases in which countries experienced large aid surges, thereby complementing existing research, which is based mainly on cross-country and panel regressions.[2]

The case study approach has several advantages. Critical variables are hard to measure in a broad sample. The regression framework handles only with great difficulty the possibility of complex interactions, such

[1] A key recommendation of the UN Millennium Project Task Force is to increase official development assistance rapidly for at least a dozen or so fast-track countries in order to support the MDGs. World Bank and IMF (2005) also advocate a substantial increase in aid to low-income countries.

[2] An earlier version of this study was presented to the IMF Executive Board (IMF, 2005a). The analytical framework and empirical evidence in this earlier paper are supplemented here by the presentation of the five case studies that informed that paper. In addition, this study formalizes the analytical framework using a New Keynesian open economy model.

as those between terms-of-trade shocks, quality of policies, and the macroeconomic effects of aid inflows. Case studies allow the examination of countries that are not in a "steady state," but that also face a challenging and dynamic macroeconomic environment. Finally, only a few cases exist (generally those covered in this study) of countries that received macroeconomically significant increases in aid—several percentage points of GDP—in the context of reasonably strong policies and governance.

Of course, a case study approach carries its own limitations. The small sample size makes it more difficult to generalize the results to all aid recipients. In addition, it becomes hard to control quantitatively (as opposed to qualitatively) for exogenous changes in the economic environment during the period of increased aid inflows. Some of the countries studied here experienced various shocks—such as large terms-of-trade movements and natural disasters—that could independently affect macroeconomic outcomes. Finally, the study is limited to a short- to medium-term policy horizon of three to four years following the initial surge in aid. While this allows for examining in much greater detail the macroeconomic policy response—particularly monetary policy, which can change with high frequency—long-run effects may be hard to trace.

Surprising Results

Initial expectations were that this study would grapple with a particular set of issues that tend to dominate the macroeconomic literature on aid inflows: the real exchange rate and Dutch disease. That is, when aid surges by several percentage points of GDP over a number of years, this may be accompanied by real exchange rate appreciation and threaten the competitiveness of exports.

In fact, the case studies revealed no significant real appreciation accompanying the surge in aid in any of the sample countries; indeed, in the majority there was substantial real depreciation over the period. This may have been partly due to simultaneous terms-of-trade shocks in some countries, but in general the magnitude of the increase in aid dominated the terms-of-trade movements, suggesting that a puzzle remained.

An obvious possibility was that the aid led directly to increased imports, so that it placed no pressure on the real exchange rate. Another was that the aid led to supply responses that kept the price of nontraded goods from rising. More detailed analysis revealed an alternative explanation, rooted in the macroeconomic policy response, which in turn formed the basis for the analytical framework developed here. All the countries in the sample were reluctant to fully absorb the increments in aid through a corresponding rise in net imports. In other words, a considerable part of the aid was used to build international reserves, rather than to transfer resources from donor to recipient country.

Why were central banks reluctant to sell the foreign exchange associated with aid inflows to accommodate a rise in net imports? The analysis here suggests that a primary concern was competitiveness, manifested in a reluctance to accept real appreciation of the exchange rate. Thus, the study finds no evidence of actual Dutch disease, but there is ample evidence that the fear of real exchange rate appreciation played an important part in the policy reaction to aid.

While the central banks held a substantial part of the aid in reserves, the fiscal authorities often increased expenditures on domestic goods and services, using the local currency obtained from selling the aid to the central bank. In effect, this is an attempt to use the same aid dollar twice, once to build reserves and once to finance government expenditure. Such a policy is very similar to a domestically-financed fiscal expansion (with the difference that reserves are now larger). It leads to identical outcomes, such as a surge in the money supply, and a consequent need to decide between inflation, on the one hand, and crowding out the private sector through the sale of treasury bills, on the other.

Thus, the country studies suggest that it is crucial for fiscal and monetary authorities to coordinate their responses to an aid surge. An uncoordinated response—typically arising because the fiscal authority wants to spend aid while the monetary authority wants to avoid exchange rate appreciation—can have unintended negative macroeconomic consequences. Hence, this study develops an analytical framework that emphasizes the interaction between the policy choices faced by fiscal and monetary authorities. This framework, in turn, helps make sense of the broad patterns observed in the individual country cases.

Work Program

With the recent focus on scaling up aid to low-income countries and various debt relief initiatives, the IMF has been deeply involved in examining the policy issues from both a theoretical and empirical perspective. Apart from this study, concurrent work has been undertaken in various area and functional departments. Rajan and Subramanian (2005a, 2005b) have conducted an extensive empirical investigation to identify the reasons why aid has historically had such a weak link with growth. They conclude that real appreciation of the exchange rate resulting from aid is likely to be a key impediment to sustained growth in recipient countries, thus emphasizing an issue that country authorities already take seriously, as documented in our case studies. Gupta, Powell, and Yang (2005) survey the extensive economic literature on the macroeco-

nomic challenge of scaling up aid to Africa in order to provide practical guidance to policymakers. In addition to a discussion of monetary and fiscal policy, which draws on the framework presented here, they cover a number of critical issues only touched on here, including debt sustainability, governance, and the impact of aid on revenue performance. Heller (2005) discusses the impact of higher aid inflows on the competitiveness of aid recipients, the delivery of public services, the management of fiscal and monetary policy, behavioral incentives, and the growth rate of the economy.[3]

The absorb-and-spend framework developed in IMF (2005a) and in this paper has been used in a number of subsequent analyses, including Adam and others (2006), Chowdhury and McKinley (2006), Foster and Killick (2006), Mohanty and Turner (2006), and United Nations (2006). The model presented in Chapter VIII, which formalizes this framework, abstracts from several features that are key to the policy implications of scaled-up aid, such as private capital mobility and sterilization through treasury bills. Ongoing research focuses on extending the model to capture the key trade-offs faced by fiscal and monetary authorities. The model could then be calibrated to a country in which the management of aid is a central macroeconomic challenge, in order to analyze more systematically the macroeconomic policy implications of aid volatility and scaling up. A next step would be to simplify the model into a practical tool for ongoing forecasting and policy analysis in aid-dependent, low-income countries.[4]

Preliminary work on this more complete model has already highlighted that private capital flows may respond to aid flows in various potentially important ways. This realization, and more broadly the growing importance of private capital flows even to some of the poorest countries, suggest that the role of private capital flows to low-income countries looks to be a fruitful topic for further analysis.

[3]There is, of course, ample research from outside the IMF. Isard and others (2006) bring together a wide-ranging set of recent papers on the macroeconomic management of aid.

[4]An example of such a tool is the model presented in Berg, Karam, and Laxton (2006), which has been used by IMF economists to analyze several developed and emerging market economies. Research is needed, however, to develop a similarly simple model appropriate to aid-dependent, low-income countries.