INTERNATIONAL MONETARY FUND

The Macroeconomics of Managing Increased Aid Inflows: Experiences of Low-Income Countries and Policy Implications

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Contents Page

EXECUTIVE SUMMARY

This paper investigates the macroeconomic challenges for low-income countries created by a surge in aid inflows. It develops an analytical framework for examining possible policy responses to increased aid, and then applies this framework to the experience of five relatively well-governed countries that experienced a recent surge in aid inflows: Ethiopia, Ghana, Mozambique, Tanzania, and Uganda. Each country's policies were supported by a PRGF arrangement during most of the period under review.

Central to managing a surge in aid inflows is the coordination of fiscal policy with exchange rate and monetary policy. To highlight this interaction, the analytical framework focuses on two distinct but related concepts: absorption and spending.

- **Absorption** is defined as the widening of the current account deficit (excluding aid) due to incremental aid. It measures the extent to which aid engenders a real resource transfer through higher imports or through a reduction in the domestic resources devoted to producing exports.

- **Spending** is defined as the widening of the fiscal deficit (excluding aid) accompanying an increment in aid.

Spending depends on fiscal policy. For a given fiscal policy, absorption depends on exchange rate policy and monetary policy. If the government receives aid-in-kind, or uses aid directly to finance imports, spending and absorption are equivalent. More typically, the government sells aid dollars to the central bank, and uses the local counterpart currency to finance spending on domestic goods. Absorption depends on the response of the central bank, with foreign exchange sales influencing the exchange rate and interest rate policy shaping aggregate demand, including for imports. The combination of absorption and spending chosen by an economy defines the macroeconomic response to aid.

To absorb and spend is the textbook response to aid; the government increases investment, and aid finances the resulting rise in net imports. Even if the government spending is on domestic goods, the aid allows the resulting higher aggregate demand and spending to spill over into net imports without creating a balance of payments problem. Some real exchange rate appreciation may be necessary to enable this reallocation of resources.

- **In the sample countries, however, a full absorb-and-spend response was found to be surprisingly rare.** Typically, there was a reluctance to embrace absorption—and the consequent real appreciation—due, at least in part, to concerns about competitiveness.

Other responses to incremental aid may be justified under some circumstances and for a limited period of time.

To save incremental aid, that is to neither absorb nor spend, may be a good way of building up international reserves from a precariously low level or of smoothing volatile aid flows.

- In two of the sample countries—Ethiopia and Ghana—absorption and spending were both very low. In Ethiopia, reserves were accumulated to bolster the exchange rate peg against the dollar. In Ghana, a buffer against extremely volatile aid inflows was built.

To absorb but not spend substitutes aid for domestic financing of the government deficit. Where the initial level of domestically financed deficit spending is too high, this can help stabilize the economy. Alternatively, this approach to aid can also be used to reduce the level of public debt outstanding, crowding in the private sector. When debt reaches low levels, however, there are typically limits to the extent to which the financial system can effectively channel additional resources to the private sector. Further attempts to absorb without spending may amount to "pushing on a string," increasing excess liquidity or even causing capital outflows rather than increased domestic activity.

To spend and not absorb is a common but problematic response, often reflecting inadequate coordination of monetary and fiscal policies. This response is similar to a fiscal stimulus in the *absence* of aid. The aid goes to reserves, so the increase in government spending must be financed by printing money or government borrowing from the domestic private sector. There is no real resource transfer given the absence of an increase in net imports.

- In Mozambique, Tanzania, and Uganda spending exceeded absorption, creating a surge in domestic liquidity. In Mozambique, this led to high inflation. In Uganda and (initially) Tanzania, treasury bill sales were used to contain inflationary pressure, leading to a rise in interest rates and the domestic debt burden.

Spending and not absorbing can lead, over time, to a spend-and-absorb outcome, if monetary and exchange rate policies are supportive. The fiscal stimulus potentially increases import demand and hence admits the possibility of greater absorption in a later period. This delayed absorption could then be financed by the accumulated aid. In order for this mechanism to operate, however, some real appreciation may be necessary, including through inflation if the exchange rate is pegged. Curtailing liquidity through treasury bill sterilization could lead to the least desirable result: no absorption of aid, coupled with a crowding out of private sector.

The experience in these cases sheds little direct light on the medium-term implications of absorbing and spending aid, mostly because this strategy was not consistently pursued in the sample. There is no evidence of aid-related Dutch disease in the sample countries, with the real effective exchange rate remaining stable or depreciating. This is due in large part to the policy decision to accumulate reserves rather than fully absorbing aid—a

policy typically inspired by concerns about competitiveness and the level of the nominal exchange rate.

In general, targets in PRGF-supported programs appear to be compatible with an absorb-and-spend response, but the consistency of monetary and exchange rate policy with fiscal policy needs greater attention in cases where the authorities deviate from this approach. Fiscal targets accommodate surges in aid, and reserve targets are consistent with an (aid-financed) increase in the current account deficit. However, where countries are unwilling to follow this strategy—perhaps in order to guard competitiveness—more care needs to be taken that an appropriate second-best outcome is achieved. In particular, when recommending treasury bill sterilization to reduce aid-related money growth, concerns about inflation must be balanced against the dangers of failing to absorb the aid and of crowding out the private sector.

The key long-run strategic choice is whether to use the aid—by absorbing and spending—or not, in which case the aid should be neither absorbed nor spent. The latter choice, in the long run, is equivalent to forgoing aid, unlike the short run, where it can be used to smooth aid volatility. Thus, it is only appropriate when competitiveness concerns dominate the returns from productive aid-financed investment. In this case, attention should be focused on how, and how fast, to scale up aid so as to minimize competitiveness problems, for example by focusing on ways to use aid to increase productivity.

I. INTRODUCTION

1. Increases in aid inflows allow recipients to increase consumption and investment. Aid 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 and implemented. The imperative to use the funds well can strain the administrative capacity of recipient governments. In addition, aid flows can weaken ownership, fragment and impair budgetary procedures, encourage rent-seeking behavior, and undermine the accountability of domestic institutions.

2. Related to but distinct from these microeconomic and institutional issues are the macroeconomic challenges of managing aid inflows. 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; in other words, microeconomic in nature. But 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.

3. Aid flows to low-income countries have increased somewhat in the past ten years. In a few relatively well-performing low-income countries, aid inflows have expanded substantially from already significant levels. Larger and more widespread increases in aid inflows are seen as critical to achieving the MDGs.[1] A scaling up of aid will amplify the macroeconomic policy challenges arising from the management of aid inflows. The Fund needs to confront these challenges squarely in its capacity as a key provider of advice on macroeconomic policies. Helping countries to manage effectively increased aid inflows would be one of the Fund's main contributions to the achievement of the MDGs.

4. This paper draws lessons from recent country experiences with the macroeconomic management of large increases in aid inflows.[2] It is designed to complement the case studies being done by the Fund and Bank and the Millennium Project, which are mainly forward-looking.[3] The questions this paper will address are:

- Do recipients of aid surges encounter macroeconomic absorptive capacity constraints?
- Is Dutch disease a concern?

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

[2] It was prepared by a team consisting of Andrew Berg, Shekhar Aiyar, Mumtaz Hussain, Shaun Roache, and Amber Mahone.

[3] See *United Nations Millennium Project* (2005), Bourguignon and others (2005), and Agenor, Bayraktar, and El Aynaoui (2005).

- How should fiscal policy be adapted to the aid inflows?

- Are aid inflows inflationary, and what is the appropriate monetary and exchange rate policy response? Is there a role for sterilization?

- Did PRGF-supported programs adequately manage the macroeconomic impact of surging aid inflows?

5. While the benefits of higher aid and the challenges of scaling up are frequently discussed, systematic analysis of country experiences is limited.[4] This paper examines five low-income countries that have dealt with these questions over the past decade. It complements existing work in two ways. First, it examines nuts-and-bolts policy questions of direct relevance to Fund-supported programs. Second, most existing research is based on cross-country and panel regression analyses, which have limitations for policy purposes, particularly with respect to the scaling up of aid.[5] While the paper draws on existing research, it will rely mainly on direct evidence from low-income countries that have experienced a surge in aid inflows. 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 quantitatively (as opposed to qualitatively) control for exogenous changes in the economic environment during the period of increased aid inflows. Finally, long-run effects may be hard to trace.

6. The country studies focus on strong performers defined in terms of institutions and economic policies. This permits drawing of lessons relevant for situations in which, broadly speaking, policy-making is not dominated by macroeconomic disarray, misgovernance, or post-conflict reconstruction. The goal is to learn how to help those countries that are well-positioned, institutionally and in terms of the policy framework, to absorb large quantities of aid. An important number of such countries have emerged in the past decade or so, including in Africa.[6] The selected low-income countries satisfy two criteria: first, each (except Ethiopia) ranks relatively high on the World Bank's indicator of quality of economic institutions and policies (CPIA), and second, each received large amounts of aid in the late 1990s and early 2000s, including a surge in aid inflows at some point over the period. The

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[4] For a broad treatment of many of the issues on scaling up aid see Heller (2005) and Klein and Harford (2005).

[5] Critical variables are hard to measure in a broad sample. The regression framework handles only with great difficulty the possibility of complex interactions, such as between terms-of-trade shocks, quality of policies, and the macroeconomic effects of aid inflows. Finally, only a few cases (generally those covered in this study) exist of countries that received macro-economically significant increases—several percentage points of GDP—in aid inflows in the context of reasonably strong policies and governance.

[6] See World Bank and International Monetary Fund (2005).

list of countries that satisfied these criteria and are covered in the paper are Ethiopia, Ghana, Mozambique, Tanzania and Uganda (Appendix I discusses sample selection in more detail).[7]

7. The paper is centered on the analyses of the country cases. Section II provides a framework for considering the macroeconomic policy response to increases in aid inflows. Section III reports on the country cases. Section IV presents a summary of these findings and implications for PRGF program design. Section V concludes with some of the broader lessons that may be drawn about the macroeconomics of increased aid inflows.

II. A Macroeconomic Framework for the Analysis of Increases in Aid Inflows

8. The macroeconomic impact of aid depends critically on the policy response to aid. In particular, it is the interaction of fiscal policy with monetary and exchange rate policy that is important. In order to highlight this interaction, it is useful to introduce two related but distinct concepts: **absorption and spending**.

9. **Absorption** is defined in this paper as the extent to which the non-aid current account deficit widens in response to an increase in aid inflows.[8] This measure captures the quantity of net imports financed by an increment in aid, which represents the real transfer of resources enabled by aid. Absorption captures both the direct and indirect increase in imports financed by aid, i.e., direct purchases of imports by the government, as well as second-round increases in net imports resulting from aid-driven increases in government or private expenditures. Absorption reflects the aggregate impact of the macroeconomic policy response to higher aid inflows, encompassing monetary, exchange rate, and fiscal policies.

10. Absorption can be defined and understood in terms of the balance of payments identity:

$$\text{Current Account} + \text{Capital Account} = \Delta\text{Reserves}.$$

Breaking the current and capital accounts into their aid and non-aid components, and rearranging items, the following identity is produced:

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[7] It is also critical to understand better how to help low-income countries with weaker performance on institutions and policies. The achievement of macroeconomic stabilization has been analyzed frequently, most recently in International Monetary Fund (2004) and International Monetary Fund Independent Evaluation Office (2004). The closely-related institutional and governance issues are discussed in the companion background paper (International Monetary Fund (2005b)) and World Bank and International Monetary Fund (2005). Macroeconomic problems in post-conflict situations are discussed in Clément (2005) and International Monetary Fund (2005c).

[8] This usage of absorption should not be confused with the related concept of "absorptive capacity" which, in addition, involves questions about the rate of return on investments financed by aid.

$$\text{Aid Inflows} = \Delta\text{Reserves} - (\text{Non-Aid Current Account} + \text{Non-Aid Capital Account}).^{9}$$

Thus, an *increase* in aid can serve some combination of three purposes: an increase in the rate of reserve accumulation; an increase in non-aid capital outflows; or an increase in the non-aid current account deficit. The rate of absorption of an increase in aid is then defined as the change in the non-aid current account deficit as a share of the change in aid inflows:[10]

$$\text{Absorption} = \Delta(\text{non-aid current account deficit})/\Delta\text{Aid}$$

For a given fiscal policy, absorption is controlled by the central bank, through its decision about how much of the foreign exchange associated with aid to sell, and through its interest rates policy, which influences the demand for private imports via aggregate demand.[11] The mechanism will depend on the exchange rate regime, but under any regime, the monetary authority can choose to accumulate reserves or to make them available for importers.[12] In the extreme case where the central bank uses the full increment in aid to bolster international reserves and does not increase net sales of foreign exchange, none of the extra aid will be absorbed.

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[9] The non-aid current account balance is the current account balance excluding official grants and interest on external public debt, while the non-aid capital account balance is the capital account net of aid-related capital flows, such as loan disbursements and amortization.

[10] With this definition, aid that finances capital outflows is not absorbed. This makes sense insofar as aid that flows back out of the country does not transfer real resources to the country. However, there are particular circumstances in which aid that finances capital outflows can be thought of as allowing an increase in absorption relative to a particular counterfactual that is relative to what might have happened without the aid. Suppose, say, because of an increase in political uncertainty residents suddenly desire to move capital abroad. The authorities use a large aid inflow to accommodate this capital outflow. Now suppose also that, without the aid, the authorities would not have accommodated this desire with reserve sales but rather would have allowed an exchange rate depreciation. This depreciation might have resulted in a reduction in the trade deficit. Compared to this counterfactual, the aid has allowed a larger trade deficit and hence more absorption. This is an unusual set of circumstances, but it may prevail when reserve levels are very low.

[11] Aid that is directly used to finance imports by the government (e.g., a grant in kind, a grant of foreign exchange that the government immediately uses to purchase imports, or aid that goes directly to NGOs to finance imports) effectively bypasses the central bank and would lead directly to absorption.

[12] This point may require some further elaboration. Consider, for example, the case where the central bank wishes to ensure full absorption. Assume, for simplicity, that the capital account is closed except for aid. Under a float, the central bank sells all the aid-related dollars on the market, and the agents who buy the dollars spend them on imports. There is an appreciation of the real exchange rate through nominal exchange rate appreciation. Under a fixed exchange rate regime, the central bank must loosen monetary policy to cause real exchange rate appreciation through an increase in inflation. Some level of the real exchange rate will yield an increase in import demand sufficient to ensure full absorption of the aid dollars at the fixed nominal exchange rate.

11. **Spending** is defined as the widening in the government fiscal deficit net of aid that accompanies an increment in aid:[13]

$$\text{Spending} = \Delta(G-T)/\ \Delta\text{Aid}$$

Spending captures the extent to which the government uses aid to finance an increase in expenditures or a reduction in taxation. Even if the aid comes tied to particular expenditures, governments can choose whether or not to increase the overall fiscal deficit as aid increases. The aid-related increases in expenditures could be on imports or domestically-produced goods and services. Analyzing spending is important because of the natural focus on the budget as a policy variable, and also because of the importance of tensions between the fiscal policy response to aid and broader macroeconomic objectives with respect to the exchange rate and inflation.

12. These definitions of absorption and spending take into account, by construction, the *fungibility* of aid. For example, if the foreign exchange associated with a particular grant is sold by the central bank, but overall net sales of foreign exchange do not increase, this does not constitute an increase in absorption, because no extra foreign exchange is available to finance an increase in net imports. Similarly, if the government allocates a new grant to financing a domestic project that was earlier financed from different sources, this does not constitute an increase in spending, since the non-aid fiscal deficit remains unchanged.

13. Absorption and spending are distinct though related concepts and policy choices.[14] If aid comes in kind, or if the government spends aid dollars directly on imports, spending and absorption are equivalent, and there is no impact on macroeconomic variables like the exchange rate, the price level, and the interest rate.[15] This paper concentrates on the more difficult and empirically relevant case where aid dollars are gifted to the government, which immediately sells them to the central bank. Subsequently, the government decides how much of the local currency counterpart to spend on domestic projects, while the central bank

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[13] The deficit net of aid is equal to total expenditures (G) less domestic revenue (T), and is financed by a combination of net aid and domestic financing: G-T=Non-aid fiscal deficit = Net aid + Domestic financing.

[14] The distinction between absorption and spending, in the terminology used in this paper, is one of the central issues associated with the "transfer problem" and discussed in Keynes (1929). Keynes was concerned with the problems involved for Germany in generating current account *surpluses* to pay reparations after World War I. He argued that for the fiscal authorities to accumulate the local currency counterpart to the required transfers was only part of the transfer problem—the other part being generating the net exports and therefore the required foreign exchange. See Milesi-Ferreti and Lane (2004) for a recent general discussion of the transfer problem and the real exchange rate.

[15] Strictly speaking, this is true only if the gifted or directly imported good is one for which there was no existing effective demand. If the good transferred was already demanded domestically, then increasing the good's supply would depress the price of tradables relative to non-tradables, leading to real appreciation.

decides how much of the aid-related foreign exchange to sell on the market and spending differs, in general, from absorption.[16]

14. Taken together, different combinations of absorption and spending out of incremental aid define the policy response to a surge in aid inflows. Below are described the four basic combinations of absorption and spending, together with a discussion of the macroeconomic implications of each. Box 1 provides a numerical example showing how the central bank and fiscal accounting works in each of these four cases.

Aid absorbed and spent

15. This is the textbook case, in that this is the situation assumed (explicitly or implicitly) in most discussions of the macroeconomic implications of aid inflows.[17] The government spends the aid increment and foreign exchange is sold by the central bank and absorbed by the economy via a widening of the current account deficit. The fiscal deficit is larger but financed by higher aid. Spending and absorption allows an increase in government spending by redeploying resources that had been devoted to the traded goods sector. In terms of the familiar national income identity $Y = C + I + G + (X-M)$, for a given output, a fall in (X-M) allows a rise in G.

16. Of course, output may not be fixed. Government expenditures may well increase output, both in the short run through the effects of associated spending on aggregate demand and in the long run through the increase in the capital stock permitted by the associated investment. To the extent that output can rise without a deterioration in the non-aid current account, however, these increases in aggregate demand and investment could have been undertaken without the aid flows. Aid absorption refers to the use of aid to finance the non-aid current account deficit associated with these aid-related increases in aggregate demand, investment, and output in general.

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[16] Pratti and Tressel (2005) find that monetary policy can control the timing of absorption. Aid could also go to the private sector directly. Here, too, if the private sector uses the dollars to directly finance imports, there is unlikely to be much macroeconomic impact. Where the private sector sells the dollars to the central bank and uses the local currency proceeds to finance domestic expenditures, similar issues will arise as in the case of government spending.

[17] See the recent contribution from Bevan (2005).

Box 1. Absorption, Spending, and Central Bank and Fiscal Accounting

In this numerical example, the government sells the aid dollars to the central bank and receives a local currency deposit at the central bank in return. Net international reserves (NIR) increase by 100 and net domestic assets of the central bank (NDA) fall by 100 (because government deposits with the central bank are a negative NDA item). This places the economy in the lower-right box of the matrix. What happens next depends on whether the central bank sells the foreign exchange and on whether the government increases the deficit; each case is discussed in the text. The example below assumes a floating exchange rate regime. The accounting story would be the same, but the numbers and details different, with a peg.

Central Bank and Fiscal Accounts

Example With Aid Inflow of 100

	Spend				Don't Spend			
Absorb	Central Bank Balance Sheet				Central Bank Balance Sheet			
	NIR	0	M	0	NIR	0	M	-100
	NDA	0			NDA	-100		
	Fiscal Accounts				Fiscal Accounts			
	Ext. Fin.	+100	Deficit	+100	Ext. Fin.	+100	Deficit	0
	Dom. Fin.	0			Dom. Fin.	-100		
Don't Absorb	Central Bank Balance Sheet				Central Bank Balance Sheet			
	NIR	+100	M	+100	NIR	+100	M	0
	NDA	0			NDA	-100		
	Fiscal Accounts				Fiscal Accounts			
	Ext. Fin.	+100	Deficit	+100	Ext. Fin.	+100	Deficit	0
	Dom. Fin.	0			Dom. Fin.	-100		

Notes:
NIR is net international reserves and M is reserve money.
NDA is net domestic assets.
Ext. Fin is external financing, and Dom. Fin is domestic financing of the deficit.

17. Some real exchange rate appreciation may be necessary and indeed appropriate in response to a sustained higher level of aid. This is because some combination of exchange rate appreciation and (if there is excess capacity) increased aggregate demand is necessary to generate the increased net imports that aid allows.[18]

18. The degree of exchange rate appreciation required to absorb the aid will in general depend on the structural response of the economy and the extent to which aid *directly* finances imports. For example, real appreciation would be higher to the extent that aid inflows finance expenditures on non-tradable goods rather than directly financing imports.[19] On the other hand, if higher incomes feed strongly into higher import demand and if the supply of non-traded goods responds strongly to the increase in their relative price, the real appreciation would be limited. In economies with significant unemployment and the potential for a quick supply response, the additional demand for non-tradable goods could induce additional employment and production, with little increase in the price level and limited real appreciation. In the longer run, investments that increase productivity in the non-tradable sector could also reduce or even eliminate the real exchange rate appreciation.

19. The mechanism for real appreciation would vary depending on the exchange rate regime. In a pure float, the central bank would sell the foreign exchange associated with the aid, causing a nominal (and real) exchange rate appreciation. In a peg, the real appreciation would take place through a period of inflation, with the increase in government expenditure being accommodated by the central bank. The increase in aggregate demand and the real appreciation would again increase net import demand, leading the central bank to sell foreign exchange in defense of the peg.

Aid neither absorbed nor spent

20. The authorities could choose to respond to the aid inflow by building international reserves, and neither increasing government expenditures nor lowering taxes. In this case there is no expansionary impact on aggregate demand, and no pressure on the exchange rate or prices.[20]

21. Not spending the aid may be infeasible over a longer time period, as donors need to account for how their assistance has been utilized. Of course, money is fungible, so that in

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[18] The real exchange rate is generally understood in this paper to refer to the relative price of non-traded to traded goods, as a conceptual matter. When it comes to measurement, the case studies unfortunately tend to follow the common practice of measuring the real exchange rate as a function of the nominal exchange rate and changes in consumer price indices. It turns out for the cases under consideration that this is unlikely to make a major difference, but further work on the correct measurement of the real exchange rate would appear justified.

[19] One category of non-tradeable goods that might be important in this process is skilled labor; if aid raises the wages of skilled professionals, this could translate into real appreciation.

[20] There may be second-order effects, e.g., expectations may change as a result of the central bank's higher international reserve position.

principle not spending aid dollars is compatible with undertaking the projects favored by donors, while cutting back on other budgetary expenditures. In practice, the extent to which this is possible would depend on the room available—both fiscally and politically—to cut expenditures in other areas.

Aid absorbed but not spent

22. Increased aid inflows can be used to reduce inflation in those countries that have not yet achieved stabilization. In such a case, the authorities can sell the foreign exchange associated with increased aid inflows to sterilize the monetary impact of domestically-financed fiscal deficits. The result would typically be slower monetary growth, a more appreciated real exchange rate, and lower inflation. Aggregate demand may increase as the inflation tax declines, with a corresponding increase in private consumption and investment. The deterioration of the trade balance that often accompanies such a stabilization program is financed by the aid inflow.[21]

23. In countries that have already achieved inflation stabilization but have large domestic public debt, the government could use the proceeds from aid to reduce the stock of local currency government bonds outstanding. This would tend to result in increased private consumption and investment, which would raise net imports through the indirect effect of higher private after-tax income on import demand. The extra foreign exchange sold by the central bank would finance this increased demand for net imports. Again, some real exchange rate appreciation is likely to be necessary to mediate the increase in net imports.

24. Whether a strategy of absorbing but not spending aid is feasible in a particular situation depends on whether a monetary relaxation would translate into higher domestic investment or consumption. If there are no good private investment opportunities, for example, an increase in credit to the private sector could result in private capital outflows or a buildup of excess commercial bank reserves at the central bank.[22] In addition, as with the neither-absorb-nor-spend strategy, donors' needs to account for the use of their assistance may make it difficult to sustain a no-spending approach.

Aid spent but not absorbed

25. A fourth possibility is that the fiscal deficit, net of aid, increases with the jump in aid, but the authorities do not sell the foreign exchange required to finance additional net imports. The macroeconomic effects of this fiscal expansion are similar to increasing government expenditures in the *absence* of aid, except that international reserves are higher. The increased deficits inject money into the economy.

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[21] This is the case emphasized by Buffie and others (2004).

[22] The IMF Independent Evaluation Office (2004) argues that PRGF program assumptions that crowding in will ensue from an increase in availability of credit to the private sector are often left unexamined and also often do not turn out to be correct.

26. In this case, the aid does not serve to support the fiscal expansion. This point is central and deserves elaboration. A transfer of real resources to the recipients country occurs only if aid finances additional net imports. Aid also serves as a way for the government to finance its domestic expenditures, as an alternative to domestic tax revenue or borrowing, either from the public or from the central bank. It may seem, therefore, that the financing of domestic expenditures, such as the hiring of nurses, is an *alternative* use for aid, in addition to imports. But this approach to the function of aid is misleading; after all, the government could always simply borrow from the central bank (i.e., print money) to finance increased domestic expenditures. Rather, the purpose of the aid is to provide the foreign exchange required to satisfy the increased demand for foreign currency resulting from the higher import demand.[23]

27. Consider a thought experiment in which, for a given level of aid, the government first decides on the appropriate level of government expenditure and its financing. This set of decisions, in principle, takes into account the scope for seigniorage, the supply response to increased fiscal expenditures, the productivity of the resulting public investment and the generation of higher exports that may result, and other such factors. Then, aid increases. The thing that has changed is *not* that the government could now productively hire, say, more nurses to fight HIV/AIDS. They could have done that before. The difference is that, whereas before such additional expenditures would have caused too much inflation or an un-financable deterioration of the current account through second-round increases in import demand, now the incremental aid increases international reserves, which could be sold to pay for the higher imports. But this is the definition of aid absorption; aid that is not absorbed cannot fulfill this function.

28. There are several monetary policy responses to a situation in which aid is being spent by the government but not absorbed in the economy. Absent foreign exchange sales to mop up the additional liquidity, the monetary policy options are the same as in the case of any domestically-financed fiscal expansion. One could be to allow the larger fiscal deficits to lead to money supply increases. This is essentially monetizing the fiscal expansion and would tend to be inflationary. In the absence of a willingness to sell foreign exchange, the nominal exchange rate will tend to depreciate as well, with a larger supply of domestic currency pushing up the price of foreign exchange. The resulting inflation tax helps contain

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[23] Related to this point is an accounting issue: "domestic financing" as usually defined in the budgetary accounts is misleading as an indicator of aid usage. It may be useful to consider the following example. Suppose aid is saved entirely in the form of gross international reserves, the government builds up deposits at the central bank, and the fiscal deficit excluding aid remains unchanged. By construction, the fiscal accounts will show a shift in financing from domestic financing (which will fall due a reduction in net central bank credit to the government) to external financing. But the aid has no macroeconomic effects in this no-absorption-and-no-spending—the money supply, fiscal stance, interest rates and so on are unaffected (except insofar as interest earnings of the central bank are higher). More generally, aid that is not absorbed does not contribute to financing of the government deficit in an economic sense. Thus, it would be misleading to conclude from a perusal of below-the-line financing items in the budget that aid inflows were actually financing the deficit to a greater extent than before.

absorption by transferring resources from the private sector. Another response is to sterilize the fiscally-driven monetary expansion through the issuance of treasury bills. This strategy would tend to crowd out private investment. In effect, there is a switch from private investment to government consumption or investment.[24]

29. There are opposing effects on the real exchange rate in the spend-but-do-not-absorb case. In a given situation the net effect will depend on specific factors, including the strength of contrasting policy choices and other influences, such as the terms of trade. The fiscal expansion tends to raise demand for non-traded goods, causing an appreciation; on the other hand, it increases import demand and lowers export supply, pushing the exchange rate towards depreciation. The net effect depends, inter alia, on the price and income elasticity of the country's export supply and import demand. In addition, the central bank's resistance to absorption creates pressures for real depreciation. In a float, aid-related liquidity injections will tend to depreciate the nominal and, in the short run, the real exchange rate. Over time, higher inflation and the associated inflation tax will reduce private demand and lower the real exchange rate and absorption. Alternatively, sterilization through the sale of treasury bills will also depress private demand and hence the real exchange rate and absorption. In a peg, only the sterilization channel operates.

30. Which of these combinations is best in the face of extra aid depends on many factors, including the level of official reserves, the existing debt burden, the current level of inflation, and the degree of aid volatility. For specific situations, some responses are more promising than others. [25]

- To *absorb and spend* the aid would appear to be the most appropriate response under "normal" circumstances. In this case there is a real resource transfer through an aid-financed increase in net imports, and a corresponding increase in public expenditures.

- To *absorb but not spend* the aid might be an appropriate response if inflation is too high (possibly owing to a very expansionary fiscal policy), resources are scarce for private investment, or the rate of return on public expenditure is relatively low. Sustained non-spending of aid may be infeasible, however, given donor objectives, unless the budget is very fungible.

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[24] Private investment and government expenditure could have different import intensities, which would modify the details of the argument but not alter the main point. Similarly, the fiscal expansion may increase aggregate output, so it is not the case that there need be a one-for-one tradeoff between government spending and private investment. But such an aggregate output expansion could have been engineered without the aid.

[25] In general, debt sustainability is an important consideration for low-income countries. However, once the decision has been *taken* to borrow internationally, all of the combinations of absorption and spending described in this paper imply a similar rise in public external debt and in future debt service. Of course, any response that restricts absorption and channels the dollars into international reserves thereby makes resources available for future debt service. But this is equivalent to borrowing money in order to service debt, and cannot be regarded as an appropriate medium-term use of aid on these grounds.

- To *neither absorb nor spend* may be an appropriate short-run strategy where aid inflows are volatile or international reserves are precariously low.[26] Accumulating international reserves while avoiding an injection of domestic liquidity through fiscal expansion could help smooth the path of the real exchange rate if aid inflows are temporarily high but expected to fall. However, it is not an appropriate response to a permanent increase in the level of aid, unless it is felt that Dutch disease concerns fully outweigh the benefits from the absorption of aid inflows (Appendix II).

- To *spend and not absorb* would appear to be the least attractive option. The use of aid to build reserves while financing the increased deficit domestically is generally unwise. Inflation can only finance a small amount of expenditure; attempts to go further tend raise little finance while damaging the economy.[27] The use of domestic sterilization is also unlikely to be a sensible medium-run strategy—it tends to shift resources from the private to the public sector and does not allow the country to benefit from a real transfer of resources financed by aid.

III. Findings from Country Cases

A. The Pattern of Aid Inflows

Overall net aid inflows

31. Table 1 below shows the pattern of aid inflows for all the countries in the sample. Gross aid inflows are the sum of grants and loans, including both program and project financing. Net aid inflows are gross inflows plus debt relief, net of amortization, interest payments on public debt and arrears clearance.[28] This is the headline measure of aid inflows, since it best captures the actual inflows of foreign exchange and hence the scale of the macroeconomic challenge. All the countries in the sample received debt relief over the period, which, in turn, permitted the clearance of external arrears in some cases and increase net aid inflows. Private inflows (e.g., foreign direct investment) can also be important, and need to be considered in conjunction with public inflows.[29] If, for example, a surge in aid

[26] Recent cross-country evidence (e.g., Bulíř and Hamann, 2005) indicates that aid continue to be volatile, that aid commitments consistently exceed disbursements, and that aid disbursements are generally pro-cyclical—thereby increasing volatility of public expenditures rather than lowering it. Pratti and Tressel (2005) construct a theoretical model to consider the optimal pattern of absorption. Implicitly, they compare absorbing and spending to neither absorbing nor spending, in the terminology used here.

[27] This point is elaborated in the accompanying background paper, "Monetary and Fiscal Policy Design Issues in Low-Income Countries."

[28] Net aid inflows = gross aid inflows + debt relief (including relief under the HIPC Initiative) – debt service + arrears accumulation; with a clearance of arrears taking a negative sign. This paper utilizes aid data from the country staff reports.

[29] Net private inflows = private transfers (e.g., remittances) + private sector loans – private debt service.

were compensated by a corresponding fall in private inflows, this would alter the challenge of macro-management considerably.

Table 1. Patterns of Aid Inflows
(In percent of GDP)

	1998	1999	2000	2001	2002	2003
Ethiopia 1/						
Net Aid Inflows		4.7	6.0	**8.8**	**16.1**	**15.0**
Gross Aid Inflows		11.7	8.8	**24.3**	**18.1**	**17.5**
Net Private Inflows		6.6	8.1	**6.8**	**5.7**	**7.7**
Ghana						
Net Aid Inflows	3.2	2.8	-0.3	**10.6**	2.6	**7.1**
Gross Aid Inflows	8.7	7.5	8.8	**14.9**	6.1	**9.5**
o/w Program Aid	1.8	1.9	3.8	**5.6**	2.6	**5.1**
Net Private Inflows	6.0	6.3	11.2	**13.0**	12.0	**13.7**
Mozambique						
Net Aid Inflows	11.6	11.4	**20.4**	**15.4**	**16.4**	**15.0**
Gross Aid Inflows	13.4	13.4	**20.0**	**16.7**	**18.5**	**17.4**
o/w Program Aid	6.3	6.3	**5.3**	**7.0**	**7.9**	**6.6**
Net Private Inflows	5.9	15.8	**10.7**	**6.3**	**15.1**	**7.7**
Tanzania 1/						
Net Aid Inflows	4.6	6.6	**7.5**	**7.9**	**6.6**	**7.6**
Gross Aid Inflows	13.3	12.7	**12.8**	**12.5**	**10.5**	**10.5**
o/w Program Aid	2.0	1.8	**2.3**	**2.7**	**3.8**	**5.1**
Net Private Inflows	2.1	2.0	**2.2**	**4.2**	**3.0**	**2.6**
Uganda 1/ 2/						
Net Aid Inflows		8.4	9.4	**14.2**	**13.7**	**12.9**
Gross Aid Inflows		9.8	10.3	**13.9**	**13.8**	**12.9**
o/w Program Aid		3.0	3.5	**6.8**	**8.3**	**8.2**
Net Private Inflows		3.0	3.2	**2.8**	**3.2**	**3.3**

Note: Figures in bold represent periods of aid surges.
1/ In Ethiopia, Tanzania, and Uganda the fiscal year begins in July. Hence, e.g., 1999 = July 1998 – June 1999.
2/ Compiling a consistent series for aid inflows in Uganda is complicated by extensive recent revisions to data. From fiscal year 2000/01 the data in the table includes about US$80 million per annum of off-budget aid, which is not accounted for in previous years. Excluding this amount would somewhat reduce the size of the aid surge, without changing the analysis in any significant way.

32. All countries experienced a surge in net aid during the study period, ranging from an average of two percent of GDP in Tanzania to an average of 8 percent of GDP in Ethiopia. The level of net aid was also high in all countries, ranging from 7 to 20 percent of GDP. In Ghana, there were two different episodes of surging aid inflows, with a sharp increase in

2001 followed by a slump the next year, followed by another surge in 2003. In all other countries, the surge in aid was persistent, in that after the initial jump, aid inflows remained substantially higher than in the pre-surge period.

33. In all countries, a surge in gross aid flows accompanied the surge in net aid inflows. In Uganda, the increase in aid was almost entirely due to a surge in program assistance. In Mozambique, the proportion of program and project aid remained roughly stable, while in Ghana the proportion fluctuated from year to year.

34. There is no case where a significant change in private inflows counteracts the pattern of aid inflows. In Ghana, while net private inflows were large relative to aid, changes in these inflows over the aid surge period were relatively small. In all other countries, private inflows were generally smaller than aid. In Ethiopia, private inflows remained fairly stable while aid inflows surged. In Mozambique, the large jump in private inflows was due to import-financing investment on an aluminum smelting plant. In Uganda, although private inflows increased substantially, they followed the pattern of aid inflows.

Net budgetary aid

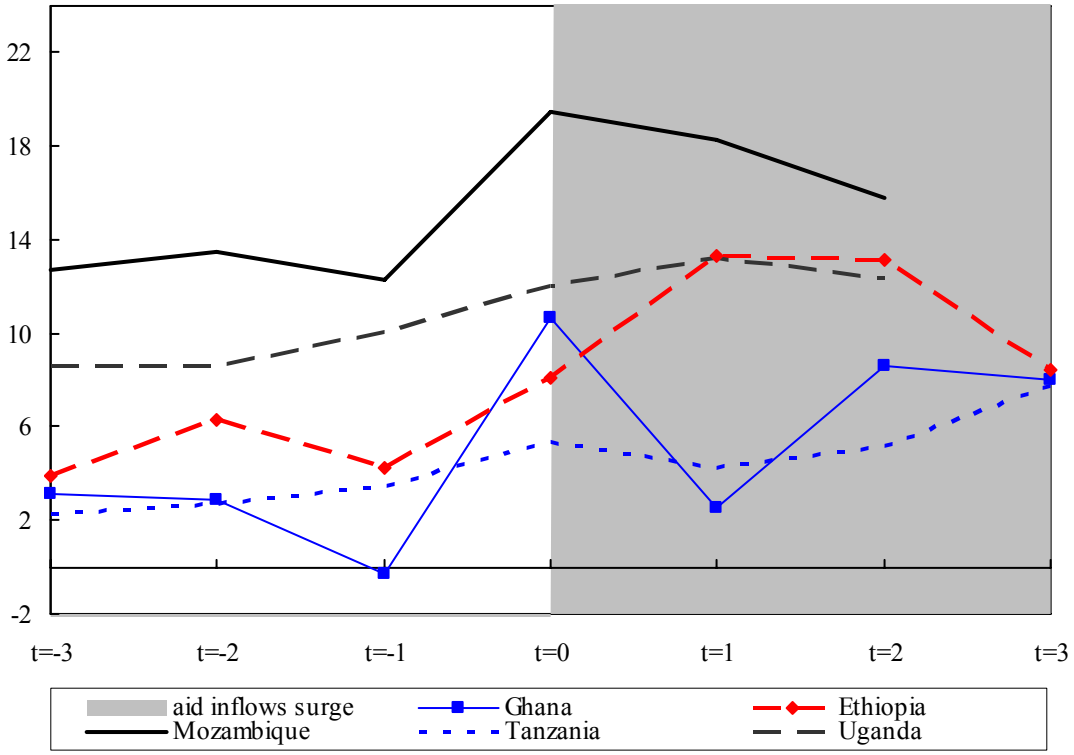
35. Net budgetary aid is the sum of budget grants and loans (including debt relief), net of public debt service and arrears clearance. Net budgetary aid usually differs from net aid inflows to the economy; for example, because some aid is channeled directly to the private sector and spent on projects outside the government budget. In this sample, however, the two aid measures behave similarly. On average, net budget aid has increased in recent years in all five countries (Figure 1). While the aid surge was gradual and steady in Tanzania and Uganda, it was more volatile in the other three cases.

36. The composition of budgetary aid changed substantially in recent years. There was a clear shift from project aid to program assistance (Figure 2a). Since the inception of the PRSP approach in 1999, donors have been increasingly willing to channel their assistance to the recipient country's general budget. This eases administrative and institutional constraints in recipient economies, and gives recipient countries more flexibility in spending the aid.[30]

[30] For example, in 2001, over 1200 donor-funded projects were being implemented in Tanzania; managing and coordinating such a large number of projects was a challenge for the authorities.

37. However, there is no obvious shift from loans to grants except in Ghana (Figure 2b). This distinction is potentially important because loans add to debt service costs in the future and therefore have implications for debt sustainability, while grants do not. On the other hand, there is some evidence that grants may have an adverse impact on the government's revenue collection, while loans may have a positive impact.[31]

Figure 1. Total Net Budget Aid
(as percent GDP)



[31] Gupta, Clements, Pivovarsky and Tiongson, 2003.

Figure 2. Changes in Composition of Budgetary Aid
(as a percent of total gross aid)

Figure 2a. Shift Towards Program Aid

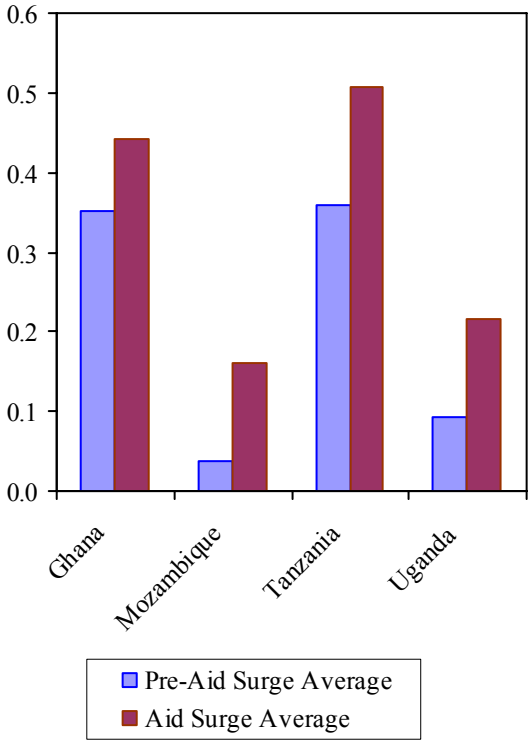
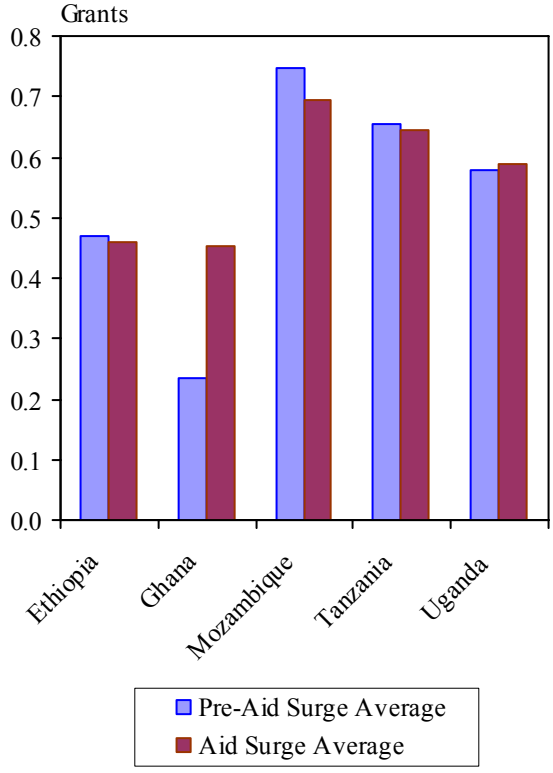


Figure 2b. No Obvious Shift Towards Grants



Source: IMF Staff Reports

B. Macroeconomic Context

38. Growth was generally robust in all countries both before and during the aid-surge period, although exogenous shocks set growth back in some years (Table 2). Devastating floods reduced Mozambique's growth rate in 2000, a drought reduced Tanzania's growth rate in 1999, and severe drought caused a two-year contraction in Ethiopia. Three of the sample countries—Ethiopia, Tanzania and Uganda—kept a tight curb on inflation, both before and during the aid surge period. In Mozambique, however, the aid surge coincided with a sharp increase in inflation. Ghana's inflation was high and volatile before and during the aid-surge period. The private investment-to-GDP ratio was mostly stable in the sample. In Ethiopia and Tanzania, the average private investment during the surge period declined slightly relative to the pre-surge average. In Uganda, it increased in the surge period. In most countries, the average public investment-to-GDP ratio was higher during the aid-surge period.

Table 2. GDP Growth, Inflation and Private Investment
(All figures in percent)

	Pre-Aid Surge Avg.	Aid Surge Avg.	Difference
Ethiopia	1999-2000	2001-2003	
GDP growth	5.7	1.8	-3.9
Inflation	4.7	2.6	-2.1
Non-food inflation	1.0	2.2	1.2
Investment / GDP	16.4	19.6	3.2
Private	9.8	9.4	-0.4
Public	6.6	10.1	3.5
Ghana	1999-2000	2001-2003	
GDP growth	4.1	4.6	0.6
Inflation	85.2	20.5	-64.6
Investment / GDP	23.6	23.2	-0.4
Private	14.1	13.8	-0.3
Public	9.5	9.4	-0.1
Mozambique 1/	1989-1999	2000-2002	
GDP growth	9.7	7.3	-2.4
Inflation	1.8	12.8	11.1
Investment / GDP	30.5	40.9	10.5
Tanzania	1989-1999	2000-2004	
GDP growth	2.8	5.4	2.6
Inflation	9.9	4.9	-4.9
Investment / GDP	15.5	17.8	2.2
Private	12.4	11.5	-0.8
Public	3.2	6.2	3.1
Uganda	1999-2000	2001-2003	
GDP growth	6.6	5.6	-1.0
Inflation	3.0	2.7	-0.3
Investment / GDP	19.6	21.0	1.4
Private	11.2	13.9	2.8
Public	8.5	7.1	-1.3

1/ Mozambique lacks reliable data on private investment.

C. Real Exchange Rate and Dutch Disease

39. Domestic expenditures financed by aid inflows may potentially lead to real exchange rate appreciation and squeeze export industries.[32] Table 3 summarizes movements in the nominal effective exchange rate and the real effective exchange rate.

40. It is immediately apparent that a Dutch disease effect on exports via real appreciation is absent in all five countries. During the years in which aid inflows surged, there is typically a *depreciation* of the real effective exchange rate, ranging from 1.5 percent (Mozambique, 2000) to 6.5 percent (Uganda, 2001).[33] Ghana observed a small real appreciation in both episodes of surging aid inflows (Figure 3).

41. A real depreciation in the face of surging aid inflows may indicate (i) structural features of the economy such as a rapid supply response to aid expenditures or high import propensities, though this would tend to mitigate the appreciation rather than cause a depreciation; (ii) a fiscal and monetary policy stance that leans against real appreciation; or (iii) other exogenous events, notably a negative terms of trade shock. Subsequent sections consider the first two explanations. With respect to the latter, two countries in the sample, Ethiopia and Uganda, were hit by significant negative terms of trade shocks during the aid-surge period. However, as shown in Box 2, even in these cases the incremental aid flows were much larger than the scale of the terms of trade shocks.

42. Consistent with real depreciation, export performance was strong in most of the sample, especially Mozambique and Tanzania. In Ghana too, export performance was strong despite a stable real exchange rate. In both countries that were affected by the decline in coffee prices, real depreciation helped export performance. In particular, non-traditional exports grew strongly, and increased as a proportion of total exports, enabling robust export growth in Ethiopia and moderating the decline in exports in Uganda.

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[32] See Appendix II for a discussion of the theoretical and empirical literature on Dutch disease.

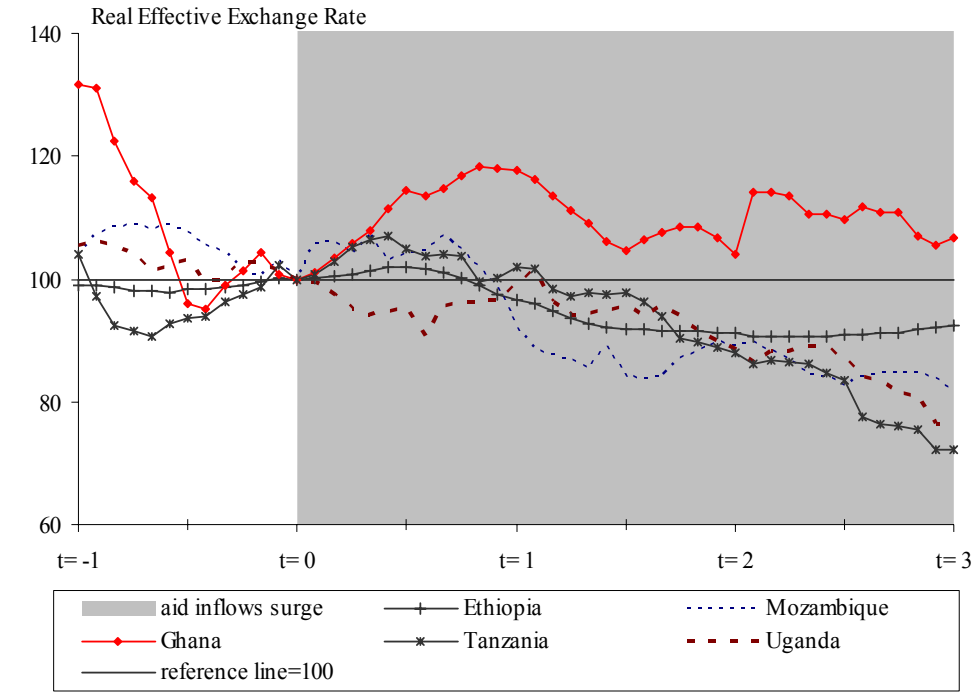
[33] These real effective exchange rate (REER) indices are based on nominal exchange rates and CPI inflation in the target country and its trade partners. Lack of data prevents supplementing these indices with the REER measured by unit labor costs, or the REER measured as the price ratio between non-tradeables and tradeables.

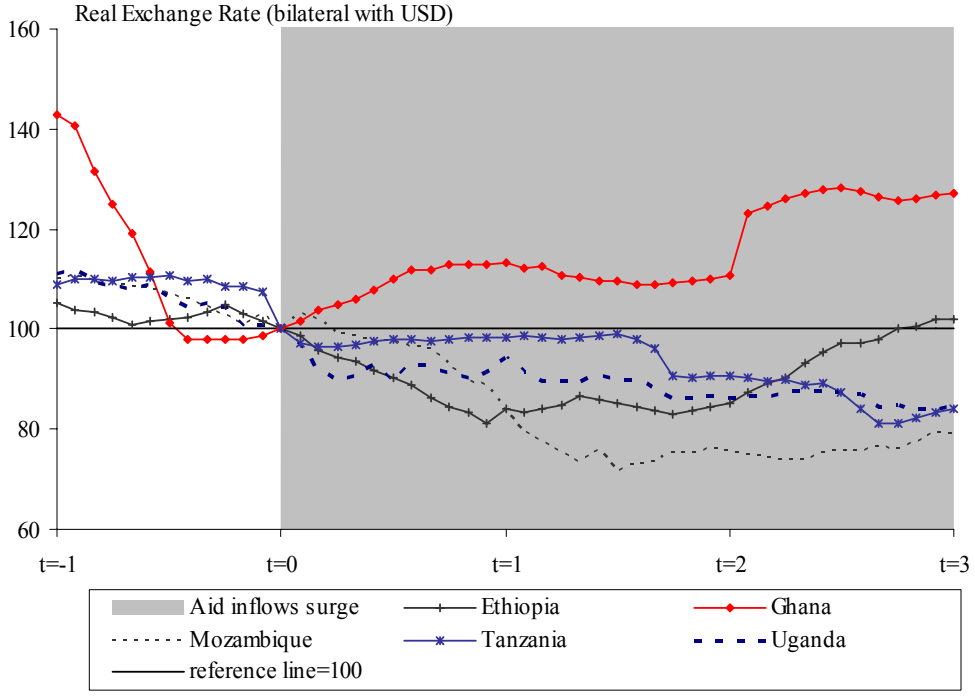
Table 3. The Real Effective Exchange Rate 1/
(Percent change over previous year, unless otherwise specified)

	Pre-Aid Surge Avg.	Aid Surge Avg.	Difference
Ethiopia	1999-2000	2001-2003	
REER (- = depreciation)	-2.0	-2.1	-0.1
NEER (- = depreciation)	-5.0	-1.5	3.5
RER (bilateral with dollar)	-5.7	-1.9	3.8
Terms of Trade	-18.3	-4.1	14.2
Exports	-9.6	-0.1	9.5
Non Traditional Exports/Exports (percent ratio)	44.0	63.5	19.5
Ghana	1999-2000	2001-2003	
REER	-17.5	0.5	18.0
NEER	-27.8	-17.8	10.0
RER (bilateral with dollar)	-12.0	-6.6	5.4
Terms of Trade	-12.7	9.7	22.3
Exports	-3.8	8.9	12.7
Non Traditional Exports/Exports (percent)	30.2	33.0	2.8
Mozambique	1989-1999	2000-2002	
REER	0.0	-6.4	-6.4
NEER	1.6	-14.1	-15.7
RER (bilateral with dollar)	-5.0	-11.1	-6.1
Terms of Trade	-8.8	1.2	10.0
Exports	11.2	39.5	28.3
Tanzania	1998-1999	2000-2004	
REER	-2.3	-9.8	-7.5
NEER	6.3	-8.7	-15.1
RER (bilateral with dollar)	3.5	-6.1	-9.6
Terms of Trade	3.3	-4.1	-7.3
Exports	-17.3	16.1	33.4
Non Traditional Exports/Exports (percent)	41.3	74.7	33.4
Uganda	1999-2000	2001-2003	
REER	-6.6	-6.3	0.3
NEER	-8.6	-5.8	2.8
RER (bilateral with dollar)	-12.0	-6.6	5.4
Terms of Trade	-14.0	-3.6	10.4
Exports	1.1	4.0	2.9
Non Traditional Exports/Exports (percent)	51.4	78.9	27.5

1/ Despite the commonly observed pattern of real depreciation observed in these countries, this often reflects active policy choices to avoid an appreciation and the effects of Dutch disease. The table does not necessarily indicate the Dutch disease is not a concern to these countries, a priori.

Figure 3. Exchange Rates and Aid Inflows





Source: Source: EDSS, Exchange Rate Facility and country authorities
Note: All indicies are 100 at t=0

Box 2. Terms of Trade Shocks and Aid Inflows

It is possible to disentangle the terms of trade effect from the aid inflows effect for the two countries in the sample that were affected by a significant terms-of-trade shock during the aid-surge period: Ethiopia and Uganda. In both Ethiopia and Uganda, the main export commodity is coffee. A sharp and prolonged decline in world coffee prices caused a deterioration in the terms of trade for both countries, and in each case this deterioration coincided with surging aid inflows.

Terms of Trade Shocks
(In millions of US dollars, unless otherwise specified)

	1999	2000	2001	2002	2003
Ethiopia					
1. ToT Effect on Net Exports 1/	-54	-484	**-13**	**-36**	**-59**
2. Change in Aid Inflows	-15	24	**235**	**417**	**21**
3. Net Effect (1 + 2)	-69	-460	**222**	**381**	**-38**
NEER (percent change)	-8.4	-1.6	**5.9**	**-1.6**	**-9.0**
REER (percent change)	-5.1	1.1	**-3.5**	**-4.9**	**2.2**
Uganda					
1. ToT Effect on Net Exports 1/	-53	-106	**-52**	**11**	**60.1**
2. Change in Aid Inflows	-82	54	**246**	**-2**	**10**
3. Net Effect (1 + 2)	-135	-52	**194**	**9**	**70**
NEER (percent change)	-14.0	-3.2	**-6.9**	**2.3**	**-12.7**
REER (percent change)	-13.0	-0.2	**-6.5**	**-1.7**	**-10.6**

Note: Figures in bold represent periods of aid surges.

1/ Calculated as the difference between actual net exports and net exports keeping unit export and import prices unchanged.

The table contains estimates of the loss in dollar inflows through net exports resulting from the terms-of-trade shock, and compares it with the increase in dollar inflows due to the surge in aid. In this calculation, year t quantities of exports and imports are fixed at the level of year t-1. This yields a counterfactual series for exports and imports; the difference between this series and the actual data on exports and imports is taken as the terms-of-trade effect.

In both cases, in the first year the incremental aid inflow dominated the negative effect from the terms-of-trade shock. This is also true of the average over the aid-surge period. Nonetheless, in both cases there was a nominal and real depreciation.

D. Was Incremental Aid Absorbed?

43. Increased aid inflows must contribute to a deterioration of the non-aid current account if a real resource transfer is to occur. Hence this paper measures absorption as the ratio of the non-aid current account deterioration to the increment in aid.

44. Following the framework in Section II, Table 4 decomposes the increment in aid in each country into the change in the non-aid current account, the change in the rate of reserve accumulation, and the change in the non-aid capital account. The increase in net imports (and hence the change in the current account) measures the extent of absorption, while the rate of reserve accumulation measures the extent to which the monetary authorities curb absorption.

45. In three countries, the aid led to some deterioration of the non-aid current account. However, this deterioration was typically modest in comparison to the incremental aid inflow. Only in Mozambique was over half the incremental aid inflow used to finance net imports. In Tanzania and Ghana, the non-aid current account actually *improved* by 2 and 10 percentage points of GDP, respectively, implying that the incremental aid was not absorbed. In all countries, the surge increased the rate of reserve accumulation. This pattern is consistent with the failure of the real exchange rate to appreciate in line with the surge in aid inflows, as detailed in the previous subsection.

46. Finally, in all countries, part of the aid increment was lost through reductions in the rate of capital inflow. In Ghana, the deterioration in the non-aid capital account exceeded the entire increment in the aid inflow. In Tanzania and Uganda, the reduction in the rate of non-aid capital inflows was comparable to the aid surge. Some short-run movements in the non-aid capital account could reflect lags between foreign exchange being made available for absorption and the actual increase in imports that comprises absorption.[34] However, this would not seem to be an adequate explanation for the more sustained changes observed in the sample.[35]

47. Were the reductions in capital inflows a result of the aid surge itself? If so, the aid inflows did not serve their intended purpose of promoting absorption. In general, the non-aid capital account might be expected to evolve exogenously; there is no compelling theoretical reason for net capital inflows to respond positively or negatively to a change in aid. However, capital outflows may be triggered by an aid surge in certain circumstances—in particular, when the authorities attempt to absorb but not spend, channeling aid to the private

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[34] For example, consider a case in which government expenditures raise wages for a set of workers. This increases their demand for imports. However, when they purchase dollars from the central bank, they do not immediately spend them on imports, but in the first instance, deposit them in dollar accounts held with domestic commercial banks. This would count as a deterioration in the non-aid capital account (due to an increase in commercial banks' net foreign assets). Subsequently, when they spent the dollars on imports, there would be a corresponding improvement in the non-aid capital account.

[35] In some countries, large errors and omissions in the balance of payments accounts could be partly responsible for measured fluctuations in the capital account.

sector through the financial system by reducing the stock of domestic bonds outstanding. If, perhaps because of poor investment opportunities at home, private investors preferred to invest abroad, a deterioration of the capital account could result. As the discussion in the next section reveals, none of the countries pursued a policy of channeling aid to the private sector through the financial system. It would thus appear unlikely that such a policy resulted in the reduction in capital inflows observed during the aid-surge period.

Table 4. Balance of Payments Identity
(Annual averages in percent of GDP)

	Pre-Aid Surge Avg.	Aid Surge Avg.	Difference	Incremental Aid Absorbed? 1/
Ethiopia	1999-2000	2001-2003		
Net Aid Inflows	5.3	13.3	8.0	
Non-Aid CA Balance	-9.2	-10.8	-1.6	Partly Absorbed
Non-Aid KA Balance	2.0	1.3	-0.7	20%
Change in Reserves (- = increase)	1.9	-3.8	-5.7	
Ghana	1999-2000	2001-2003		
Net Aid Inflows	1.3	6.8	5.5	
Non-Aid CA Balance	-13.4	-3.4	10.0	Not Absorbed
Non-Aid KA Balance	9.9	2.1	-7.8	0%
Change in Reserves (- = increase)	2.2	-5.4	-7.6	
Mozambique	1989-1999	2000-2002		
Net Aid Inflows	11.5	17.4	5.9	
Non-Aid CA Balance	-19.7	-23.6	-3.9	Mostly Absorbed
Non-Aid KA Balance	8.7	8.3	-0.4	66%
Change in Reserves (- = increase)	-0.5	-2.1	-1.7	
Tanzania	1998-1999	2000-2004		
Net Aid Inflows	5.6	7.8	2.2	
Non-Aid CA Balance	-9.2	-6.8	2.3	Not Absorbed
Non-Aid KA Balance	4.1	1.7	-2.4	0%
Change in Reserves (- = increase)	-0.6	-2.7	-2.2	
Uganda	1999-2000	2001-2003		
Net Aid Inflows	8.9	13.6	4.7	
Non-Aid CA Balance	-10.1	-11.4	-1.3	Partly Absorbed
Non-Aid KA Balance	1.6	-1.1	-2.8	27%
Change in Reserves (- = increase)	-0.4	-1.1	-0.7	

Source: IMF Staff Reports.

Note: Errors and Omissions have been included in the capital account.

1/ Non-Aid Current Account deterioration as percent of incremental aid inflow is truncated at 0 and 100.

48. Aid inflows could also cause a capital outflow if they led the authorities to pursue an excessively loose monetary policy. Aid-related fiscal spending tends to increase the money supply. If the authorities allow this to lead to excessively low interest rates and excess liquidity in the banking system, capital outflows could result. As discussed in the next sections, aid inflows to Tanzania were associated with periods of relatively loose monetary policy, and this may have contributed to the slowdown in capital inflows. Direct evidence is scarce, however.

49. In Ghana, the reduction in capital inflows seems to have been associated not with the aid surge but with macroeconomic disarray. Following a negative terms of trade shock and with reserves almost depleted, non-aid capital inflows fell sharply in 2000 and again in 2001. In 2000, the exchange rate weakened sharply and inflation shot up. With an aid surge in 2001, the authorities were able to avoid devaluing the exchange rate. In this case, the aid inflows likely kept absorption higher than it would have been.

E. Was Incremental Aid Spent?

50. Incremental budgetary aid is spent, by definition, to the extent that it leads to an increased fiscal deficit net of aid. The government can spend aid directly by increasing public expenditures, or indirectly by lowering taxes (because aid is then transferred to the private sector). This section examines whether the increase in aid was spent and explores the implications of aid volatility for spending patterns. The evidence on spending incremental aid is summarized in Table 5.

51. Three countries (Mozambique, Tanzania and Uganda) spent most of the additional foreign assistance. In Mozambique, public expenditures actually increased more, on average, than the increment in net aid inflows, leading to a substantial widening of the fiscal deficit net of aid. A variety of factors helped these countries spend the incremental budgetary aid. Because these countries had attained macroeconomic stability in the mid-to-late 1990s before the aid surge, reducing domestic financing of the budget deficit was not a major goal. Similarly, retiring domestic public debt was also not a key objective as these countries had rather low domestic financing of the deficit as well as domestic debt and debt service prior to the aid surge (Table 6). They had strengthened their expenditure management systems, partly because of the HIPC Initiative, which helped them spend most of the incremental aid that they received as program assistance.[36] To the extent that these countries spent the aid increments, the additional spending was concentrated on capital and poverty-reducing expenditures.

[36] Mozambique, Tanzania and Uganda reached their decision point under the HIPC Initiative before mid-2000. Improving expenditures management and tracking was part of the fiscal conditionality in all three countries.

Table 5. Allocation of Incremental Net Budgetary Aid: Spent or Saved
(In percent of GDP)

	Pre-Aid Surge Average 1/	Aid Surge Average 1/	Difference	Incremental Aid Spent or Not? 2/
Ghana				
Net fiscal aid inflows	1.3	7.3	6.0	
Revenue (excluding grants)	17.1	19.0	1.9	
Expenditure (excl. external interest)	27.0	29.3	2.3	Not spent
Overall fiscal balance before aid	-9.9	-10.3	-0.4	7%
Ethiopia				
Net fiscal aid inflows	5.3	11.2	5.9	
Revenue (excluding grants)	18.0	19.4	1.5	
Expenditure (excl. external interest)	31.8	32.5	0.7	Not spent
Overall fiscal balance before aid	-13.8	-13.0	0.8	0%
Mozambique				
Net fiscal aid inflows	12.9	17.9	5.0	
Revenue (excluding grants)	12.6	13.9	1.3	
Expenditure (excl. external interest)	26.0	32.7	6.7	Spent
Overall fiscal balance before aid	-13.0	-18.5	-5.5	100%
Tanzania				
Net fiscal aid inflows	4.7	8.6	3.9	
Revenue (excluding grants)	12.1	12.5	0.4	
Expenditure (excl. external interest)	16.7	20.7	4.0	Spent
Overall fiscal balance before aid	-4.8	-8.3	-3.5	91%
Uganda				
Net fiscal aid inflows	9.3	12.5	3.2	
Revenue (excluding grants)	12.6	12.8	0.1	
Expenditure (excl. external interest)	22.2	24.7	2.5	Mostly spent
Overall fiscal balance before aid	-9.6	-12.0	-2.4	74%

1/ For all countries except Tanzania, 1999-2000 is the before aid-surge period and 2001-03 is the aid-surge period for Tanzania, 1998-1999 is the before aid-surge period, and 2000-04 is the aid-surge period.
2/ Non-aid fiscal balance deterioration as a percent of incremental aid inflow is trucated at 0 and 100.

Table 6. Domestic Debt and Debt Service Indicators

	Pre-Aid Surge Avg.	Aid Surge Avg.	Difference
Ethiopia	1999-2000	2001-2003	
Domestic debt 1/	37.8	39.1	1.3
Interest payments 2/	7.4	5.6	-1.8
Nominal interest rates on T-bills 3/	3.4	1.6	-1.8
Real interest rates in T-bills 3/	-0.8	-2.1	-1.3
Ghana	1999-2000	2001-2003	
Domestic debt	23.0	23.1	0.2
Interest payments	28.0	27.5	-0.5
Nominal interest rates on T-bills	38.1	26.5	-11.6
Real interest rates in T-bills	19.3	1.7	-17.6
Mozambique 4/	1989-1999	2000-2002	
Domestic debt	0.3	2.6	2.2
Interest payments	0.2	3.8	3.6
Nominal interest rates on T-bills	11.8	24.0	12.2
Real interest rates in T-bills	9.0	11.1	2.2
Tanzania	1989-1999	2000-2003	
Domestic debt	10.1	9.5	-0.6
Interest payments	6.9	7.4	0.6
Nominal interest rates on T-bills	11.6	8.0	-3.6
Real interest rates in T-bills	1.3	3.0	1.7
Uganda	1999-2000	2001-2003	
Domestic debt	3.4	8.1	4.7
Interest payments	2.6	6.9	4.3
Nominal interest rates on T-bills	8.2	10.3	2.2
Real interest rates in T-bills	3.6	7.2	3.6

1/ Domestic public debt as percent of GDP.

2/ Interest payments on domestic public debt in percent of government revenue.

3/ Average interest rates on Treasury-Bills (in percent).

4/ In Mozambique, values are for 1999 only for domestic public debt and T-bill rates.

52. The governments in Ghana and Ethiopia, however, spent very little of the incremental aid. These countries had a relatively weaker record of macroeconomic stability, and a low level of international reserves before the aid surge, which limited their ability to spend additional aid. As these countries had relatively high domestic debt and domestic financing of the budget prior to the aid surge, reducing domestic public debt (and hence domestic debt service) was also a consideration for not spending the additional aid. Ghana also experienced highly volatile aid inflows; net budgetary aid increased by 10 percentage points of GDP in 2001, then dropped by 8 percentage points of GDP in 2002 before recovering in 2003. This volatility appears to have been a major factor in saving incremental aid in 2003. In Ethiopia, limited administrative capacity and weak institutions following the conflict with Eritrea may also have been additional factors.

53. In neither Ghana nor Ethiopia were program targets in Fund-supported programs generally responsible for the underspending of the aid increments. In most cases, PRGF-supported programs allowed aid-recipient countries to spend the aid inflows. These programs accommodated expected increases in aid flows with a comparable expansion in targets for the fiscal deficit excluding aid (Figures 4a and 4b). One significant exception is Ethiopia in the 2001/02 fiscal year, when the Fund-supported program envisaged a budgetary aid surge of about 5 percent of GDP but the programmed level of fiscal deficit net of aid did not accommodate this expected increase in aid with a commensurate increase in spending. The program was aiming to reduce inflation driven by an excessive deficit and associated monetary financing during the war period of 1997/1998–1999/2000.[37]

54. In Ghana, the Fund-supported programs anticipated only partly spending the aid increments. Through 2001 to 2003, the expected increase in aid was 2-4 percent of GDP higher than the programmed increase in the deficit. The goal was to use aid to reduce domestic financing and thus lower domestic interest rates and the government's interest bill. In the event, probably in part because of the high aid volatility, even these targets for spending were not binding, particularly in 2003.

55. The government can also spend aid indirectly by lowering taxes and transferring aid to the private sector. Contrary to theoretical considerations of moral hazard, and some evidence from other countries,[38] the revenue-to-GDP ratio increased in three countries (Ethiopia, Ghana and Mozambique), and remained largely unchanged in the other two cases (Tanzania and Uganda). [39] For the latter cases, additional fiscal aid might have reduced the incentives for aid recipients to strengthen revenue efforts, as total revenues stagnated below 15 percent of GDP.[40] Stagnant domestic revenues combined with expanding recurrent public expenditures (partly because of additional spending in priority sectors) had reduced public savings in these countries.

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[37] Of course, project aid was expected to be spent; the program targeted overall expenditures and thus implied a reduction in non-aid-financed spending.

[38] Gupta and others (2003) find evidence that aid lowers revenue effort in a large sample of developing countries, though the effect is modest except in countries with relatively high levels of corruption. McGillivray and Morrissey (2001) reported a significant negative incremental impact of aid on domestic revenue for Pakistan and Côte d'Ivoire.

[39] Of course, in the absence of a counterfactual it is always difficult to gauge whether revenue effort was harmed by aid. One indicator, however, is provided by PRGF revenue targets. In general these were met by most countries in the sample for most periods. The exceptions were Ethiopia and Mozambique, which missed several quarterly targets on government revenue. However, these episodes did not appear to be the result of moral hazard arising from increased aid inflows. In Ethiopia, the 2004 ex-post assessment argues that the revenue targets were overly ambitious given the pace of structural adjustment in the country. In Mozambique, these episodes were more attributable to a drop in excise and import taxes arising from an increase in world oil prices.

[40] A small decline in revenues at a time when aid was growing (Tanzania 1999-2000 and Uganda 2001) was mostly owing to exogenous factors such as trade liberalization and terms of trade shocks.

56. Aid volatility also contributed to some governments' choice of not spending the aid increments. There are two broad fiscal responses to aid volatility: adjust expenditures in line with the aid fluctuations, or smooth spending by building up reserves (and government deposits) when aid is up and using domestic financing to offset aid shortfalls. Where aid was largely spent such as Tanzania and Mozambique, expenditures tended to move roughly one-for-one with year-to-year movements in aid. In Ghana, however, overall expenditures were relatively unresponsive to aid volatility, particularly in the second major aid surge in 2003. To some extent, the preference to build up official reserves in Ethiopia and Ghana appears to have contributed to saving the incremental aid. Only Ghana, in 2002, resorted to substantial additional domestic financing to offset shortfalls in budgetary aid.

Box 3. Aid Volatility and the PRGF-Supported Programs

Aid inflows remain generally volatile and unpredictable.[1] Volatility has potentially serious adverse consequences for recipients. For example, Celasun and Walliser (2005) find that periods of excess aid and tax revenue are not used to accelerate domestically-financed investment spending to potentially "catch up" with previous shortfalls. This implies that lack of aid predictability may have permanent costs in terms of lost output. In addition volatility may complicate systemic liquidity management, by injecting large and unpredictable amounts of liquidity into a thinly monetized economy.

In the sample considered here, aid was hard to predict even one year ahead (Figures 4a and 4b). Part of the aid volatility is a welcome response to exogenous shocks (e.g., aid inflows to Mozambique increased sharply in response to the floods in early 2000, and in response to Ethiopia's drought in 2002). Because low-income countries are disproportionately prone to exogenous shocks such as terms-of-trade declines or natural disasters, aid inflows should ideally be able to cushion at least part of the adverse impact of these shocks.[2] Volatility may also reflect aid conditionality and thus is, to some extent, endogenous to recipient government's actions. It may also reflect the donors' budget cycles.

While prediction errors were common, the Fund was not systematically overcautious in projecting net aid inflows for the budgets. In none of the five sample countries considered here was there a consistent pattern of under- (or over-) prediction, except in Mozambique.

In most cases, PRGF-supported programs allowed aid-recipient countries adequate fiscal space to spend anticipated aid inflows. The PRGF-supported programs generally dealt with aid surprises more cautiously than with expected changes in aid. In the case of positive aid surprises, PRGF-supported programs limited the spending of aid in excess of projections via reducing the ceiling on net domestic financing of the government in three of the five countries (Box 3 Table). Such an adjustment in the ceiling sets an implicit limit on the fiscal deficit.[3] When actual program aid exceeded the level projected under the program, net domestic financing of government budget was reduced by the full amount of the excess aid.

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[1] Bulir and Hamann (2005) find that aid volatility—measured as the ratio of the variance of aid to the variance of revenue—increased during the 2000-03 period compared to the level in 1995-98 for all five countries in the sample. Simulations from a calibrated real business cycle model in Arellano and others (2005) suggest that aid volatility may cost poor countries as much as 3-4 percent of GDP.

[2] IMF (2003), Guillaumont and Chauvet (2001).

[3] If the aim is to fix the fiscal deficit regardless of aid, then net domestic financing would be adjusted downward by the full amount of unprogrammed aid, and if the aim is to allow the fiscal deficit to vary fully with aid, there would be no adjuster on net domestic financing of the government.

Box 3 (concluded). Aid Volatility and the PRGF-Supported Programs

In the case of negative aid surprises, the PRGF-supported programs implied a limited degree of fiscal adjustment by allowing some increase in net domestic financing of the government and lowering international reserve targets. At one extreme, the Fund-supported program in Tanzania allowed increases in the net domestic financing target by 100 percent of any aid shortfall; on the other extreme, the program in Mozambique did not allow for any adjustment in net domestic financing. In other cases, the programs allowed for only partial upward adjustment in net domestic financing in response to a negative aid shock.

In the event, only in Ghana were these adjusters binding. In Ghana, the downward adjustment in the ceiling on domestic financing of the government limited spending of incremental aid in 2001. In view of the subsequent unexpected collapse in aid, this turned out to be welcome. In other cases there were no significant positive surprises during the period of study or there was no adjuster (Mozambique), allowing surprises to be spent.

Unanticipated Aid Changes and Net Domestic Financing of the Government

	Excess Aid	Shortfall in Aid
Ethiopia 1/	Domestic financing reduced by 100 percent of the excess.	Domestic financing of the budget deficit raised by 50 percent of the shortfall.
Ghana	Domestic financing reduced by 100 percent of the excess.	Raised by 50 percent of the shortfall (before June 2001), up to a maximum of $50 million (until March 2002), and up to a maximum of $75 million (starting in March 2002).
Mozambique 2/	No adjuster: no effect on net domestic financing.	No explicit adjuster: no change in net domestic financing of the budget deficit.
Tanzania 2001-2004 3/	No effect on domestic financing of the government budget.	Domestic financing raised by 100 percent of the shortfall; in 2001 adjustment was capped at $60 million.
Tanzania 1996-2000 4/ 5/	Domestic financing reduced by 100 percent of the excess.	Domestic financing raised by 60 percent of the shortfall.
Uganda 6/	Domestic financing reduced by 100 percent of the excess.	Domestic financing raised by 100 percent of the shortfall.

1/ A shortfall (or excess) in foreign program assistance, defined as cumulative sum of non-project external funding excluding HIPC assistance, from the programmed levels triggers adjustments.

2/ Domestic primary deficit was the target in Mozambique, which implicitly implied a target for net domestic financing of the government. However, an increase in net domestic assets in response to an unexpected shortfall in program aid implicitly allowed additional domestic financing.

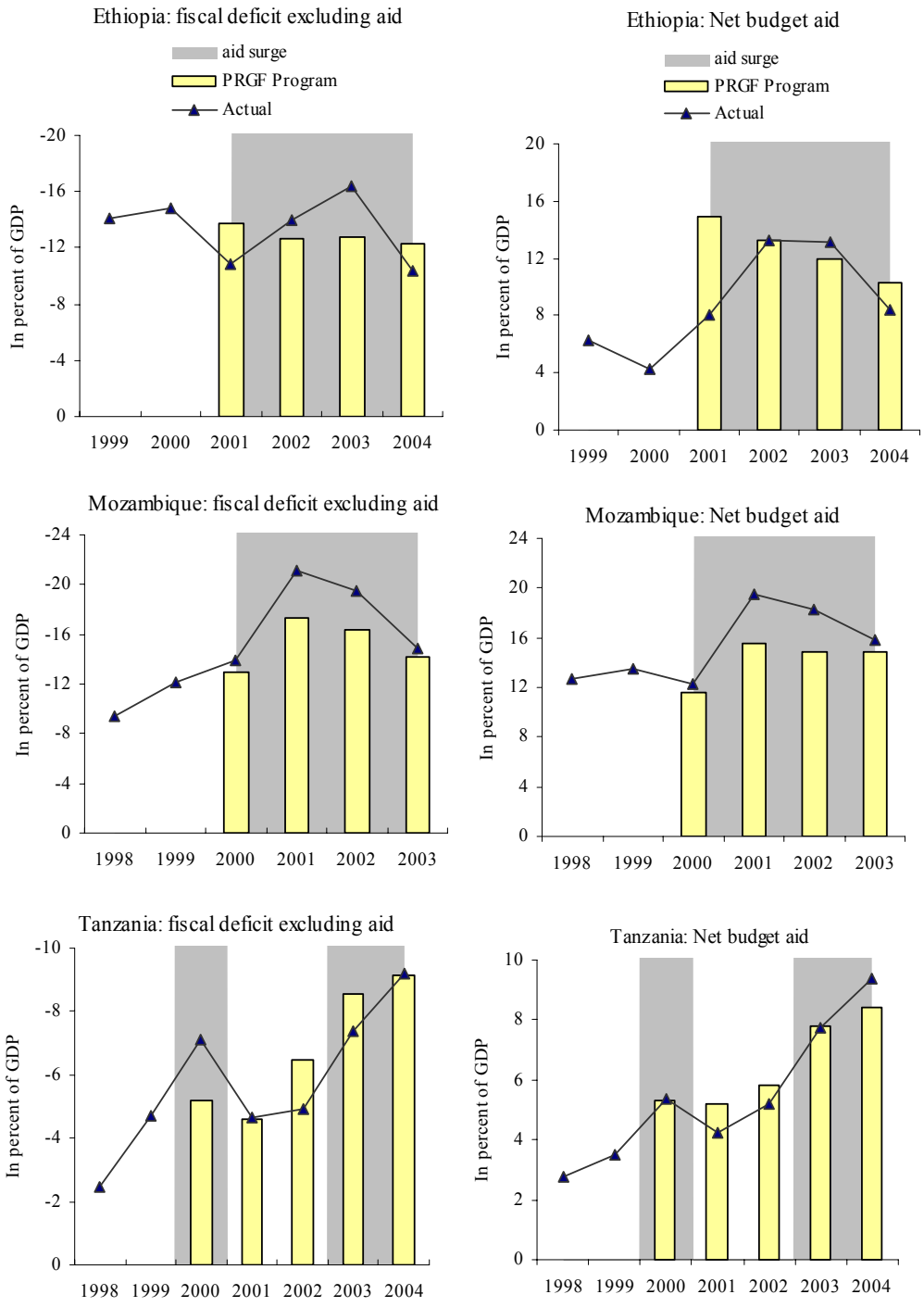
3/ A shortfall in foreign program assistance, which is defined as cumulative sum of program grants and program loans, from the programmed levels triggers adjustments. For 2001, the trigger was *net foreign financing,* which was defined as the cumulative sum of program grants and program loans minus external debt service paid.

4/ A shortfall (or excess) in *net foreign financing,* defined as the cumulative sum of program grants and program loans minus external debt service paid, from the programmed levels triggers adjustments.

5/ In the 1996-97 period, a performance criteria on net credit to the government from the Bank of Tanzania (ceiling) was also in place, which was adjusted upward by 60 percent (downward by 100 percent) for any shortfall (excess) in *net foreign financing*.

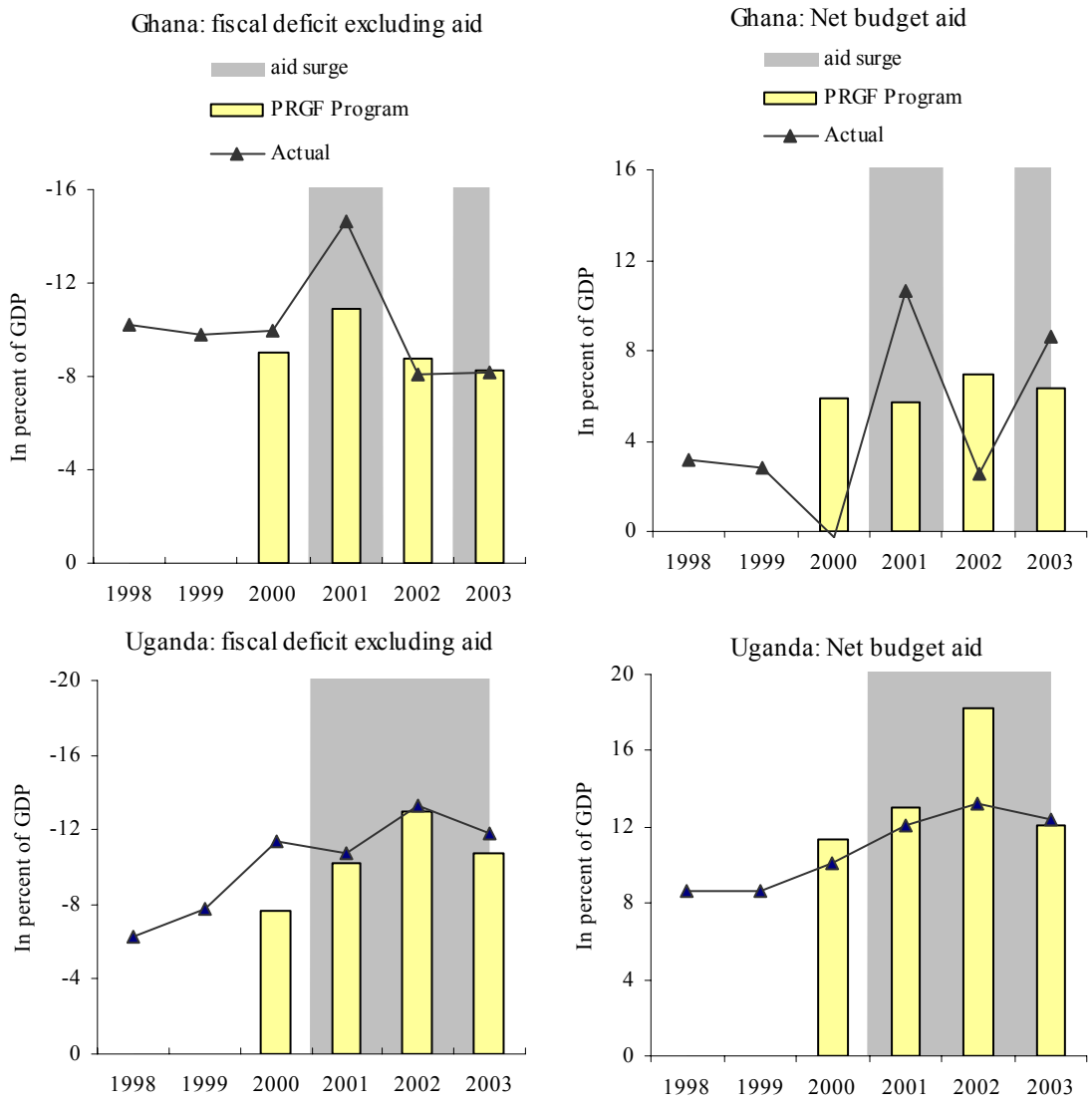
6/ Net credit to the government (ceiling) adjusted up (down) for any shortfall (excess) in import support (basically, program aid) including HIPC debt relief.

Figure 4a. Programmed vs. Actual Levels of Fiscal Deficit (Excluding Aid) and Net Budget Aid



Source: IMF Staff Reports

Figure 4b. Programmed vs. Actual Levels of Fiscal Deficit (Excluding Aid) and Net Budget Aid



Source: IMF Staff Reports

F. Monetary Impact of Aid and Policy Response

57. This section considers the monetary policy response to aid surges. First, a categorization in terms of aid absorption and fiscal response gives a picture of the challenge for monetary policy in each country.

58. Table 7 below is a condensed presentation of the absorption and fiscal responses detailed in the previous sections. The rows indicate the extent to which the surge in aid inflows was absorbed by a deteriorating non-aid current account balance, which is a rough measure of the extent to which aid ultimately financed imports. If 100 percent of the aid surge went to finance imports, this aid was "fully absorbed." The columns indicate by how much government spending increased (or revenues declined) as a percentage of the aid increment. If the aid surge was accompanied by an equivalent increase in the fiscal deficit, this aid was "fully spent." Different combinations of absorbing and spending aid carry different implications for monetary policy, as discussed in Section II, and hence require different policy responses.

Table 7. Classification by Aid Absorption and Expenditure

	Not Spent 2/	**Partly Spent**	**Mostly Spent**	**Fully Spent**
Not Absorbed 1/	Ghana (0, 7)			Tanzania (0, 91)
Partly Absorbed	Ethiopia (20, 0)		Uganda (27, 74)	
Mostly Absorbed				Mozambique (66, 100)
Fully Absorbed				

1/ "Absorb" variable = Non-Aid Current Account Deterioration as percent of Incremental Aid Inflow. Truncated at 0 and 100. This variable is the first entry within brackets for each country.

2/ "Spent" variable = Non-Aid Fiscal Balance Deterioration as percent of Incremental Aid Inflow. Truncated at 0 and 100. This variable is the second entry within brackets for each country.

59. The figures on aid absorption and expenditure above are based on comparing period averages for pre-aid surge and aid surge periods. Since the periods under consideration range from two to four years, the averages mask considerable policy variations from year to year. Nonetheless, on the basis of the classification above, two main groups may be discerned: (i) countries in which the aid impact was limited because only a small part of aid (if any) was either absorbed or spent (Ethiopia, Ghana), and (ii) countries in which expenditure exceeded

absorption, resulting in an injection of domestic liquidity and creating upward pressure on prices (Mozambique, Tanzania, Uganda). In general, aid was much more likely to be spent than to be absorbed.

Limited Aid Impact

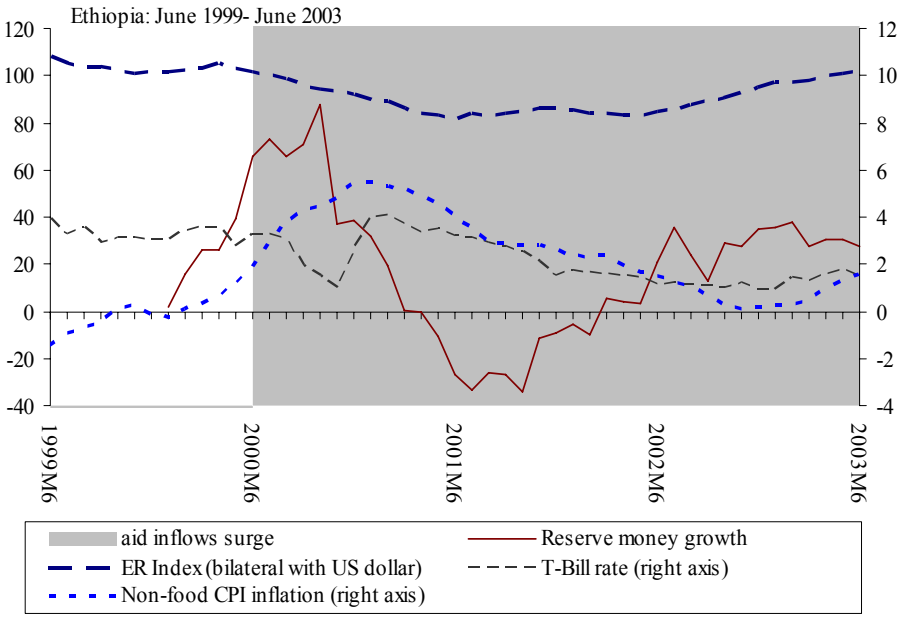
60. In both Ethiopia and Ghana, gross reserves increased substantially over the period of the aid surge, from 2.2 months of imports in 1999/2000 to 3.8 months in 2002/03 in Ethiopia, and from 1.3 months of imports in 2000 to 4.9 months in 2003 for Ghana. Both countries entered the aid-surge period with a precariously low level of reserves and used the increments in aid to increase import coverage. Thus there was little aid absorption.

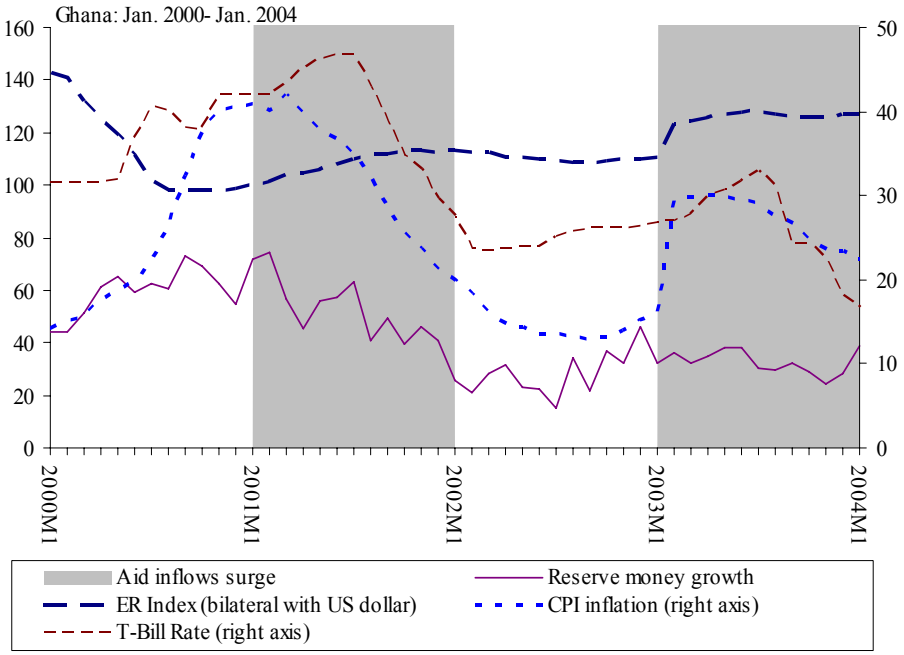
61. In neither country was the aid surge accompanied by an increase in domestic spending in excess of revenue generation. Therefore, over the period as a whole, the aid did not lead to a substantial injection of domestic liquidity. Effectively, where there was a rise in the central bank's NFA, it was sterilized through an accumulation of government deposits at the central bank or by increasing reserve requirements for domestic banks. In Ethiopia the growth rate of reserve money fell substantially during the beginning of the surge period. Inflation was very low when the aid surge commenced, and remained within a 2-5 percent range throughout the aid-surge period. In Ghana the rate of growth of reserve money declined significantly over its two distinct aid-surge periods. Although this was achieved partly by selling reserves in the 2001 surge, once the currency stabilized further aid inflows (and more) were accumulated as reserves. Inflation stood at over 40 percent per annum when the aid surge began, but had fallen to about 15 percent by end-2003 (Figure 5).

62. A policy geared towards using aid for reserve accumulation largely explains the exchange rate patterns examined previously for both countries. In Ethiopia, substantial aid inflows were accompanied by a modest depreciation of the REER over the surge period. This is consistent with the terms-of-trade shock suffered by the country in conjunction with saving most of the aid in the form of international reserves. In Ghana the terms of trade improved during the surge period, but the accumulation of international reserves kept the real appreciation very modest.[41]

[41] Although both countries avoided substantial REER appreciation, this was achieved through different combinations of inflation and nominal exchange rate movements. In Ethiopia the birr was pegged to the dollar, which necessitated a low rate of inflation to keep the REER on a downward path. Consistent with this objective, reserve money growth remained low during both pre-aid surge and aid-surge periods. Ghana, on the other hand, experienced a combination of high inflation and nominal depreciation, the net effect of which was a fairly stable REER. Reserve money growth was high (although falling) over both pre-aid surge and aid-surge periods.

Figure 5. Ethiopia and Ghana. Monetary Indictors





Source: IMF staff reports, country authorities

63. The policy responses of these two countries were not dictated by the PRGF-supported program (Figure 6). In Ethiopia, during the aid surge period NDA remained below its target PRGF path, while net foreign reserves remained above the target path.[42] This implies that the authorities' chief concerns—keeping the nominal peg against the dollar and accumulating reserves—diverged to some extent from the PRGF target path.[43] Closer adherence to the program would have implied more spending (supported by higher NDA), coupled with greater sales of foreign exchange.[44]

64. In Ghana, the strategy of the PRGF-supported program was to absorb and partly to spend the expected aid increments, in order to reduce the burden of domestic debt on the economy. When the aid surge began in 2001, the government was combating high inflation from the previous period. Net international reserves remained close to the PRGF target, consistent with sterilization through the sale of foreign exchange. NDA exceeded the program target, but inflation came down over the period. In 2002 the authorities were already planning some fiscal adjustment; when aid collapsed, even more tightening than earlier envisaged became necessary. When aid surged again in 2003, the authorities were much more cautious with domestic expenditures and sterilized the aid inflow through the accumulation of government deposits at the central bank. International reserves rose well above the program floor, while NDA remained well below the program path. The growth rate of reserve money fell sharply (although it remained above the program target) and inflation followed suit.

65. In Ghana, better adherence to the program path in 2003 would have combined more spending with sterilization through foreign exchange sales (instead of through reserve accumulation). This is probably a better response to a *permanently* higher level of aid inflows, since it allows higher absorption. In Ghana's case the authorities were presumably influenced by the negative consequences of the aid collapse in the previous period and opted for the more risk-averse strategy of reserve accumulation.

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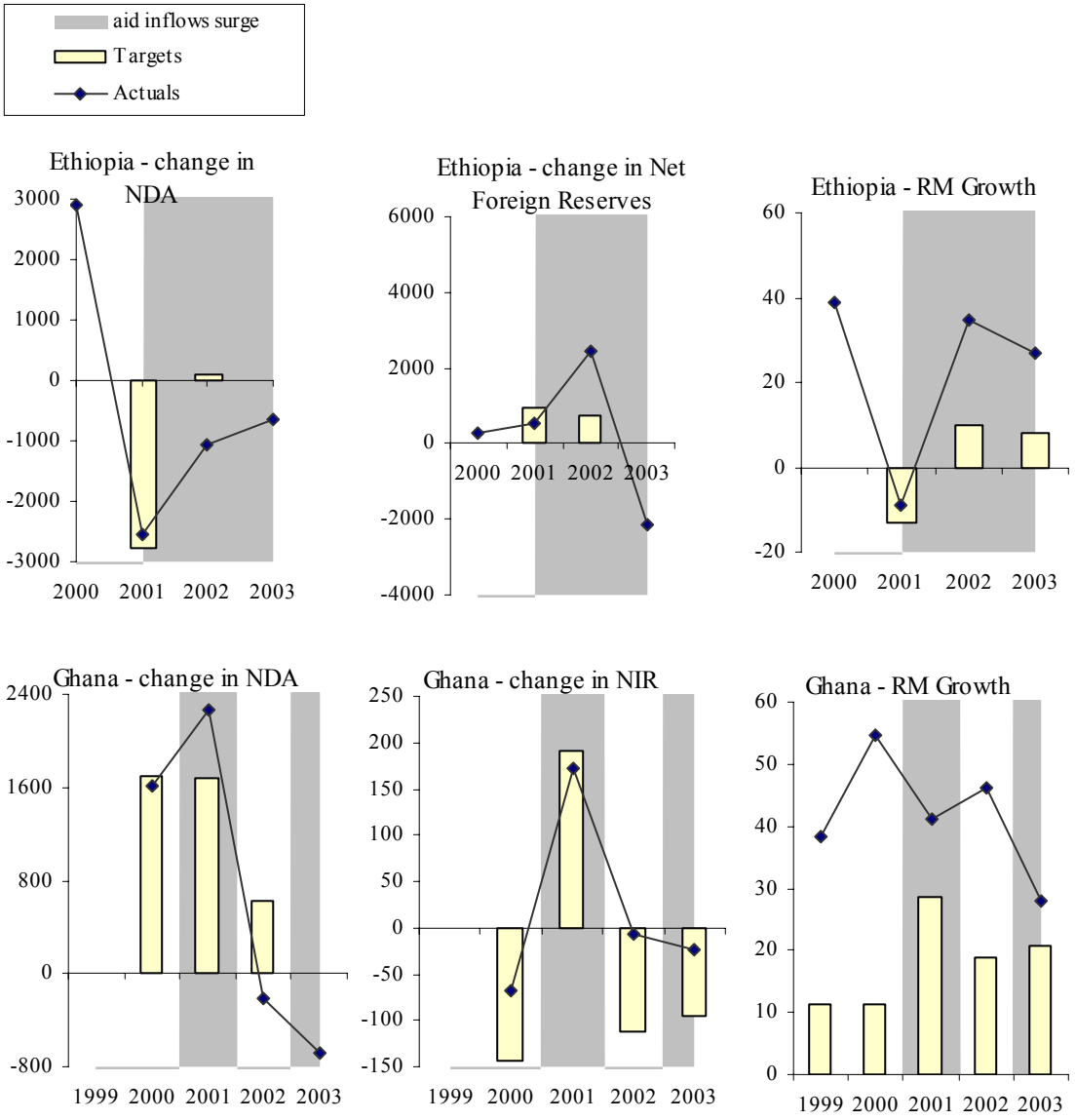
[42] The exception was in 2001, when both NDA and net foreign reserves were very close to the program path, implying that the authorities' post-war stabilization strategy of using aid to build reserves and cutting domestic expenditures was in line with the PRGF program.

[43] It appears that the program may have been too restrictive in its reserve money path. Despite base money exceeding its programmed path during most of the aid-surge period, inflation was contained to a low level. Implicitly, it seems that the increase in money demand accompanying post-war monetization was underestimated. This was inconsequential in practice because the reserve money target was only indicative.

[44] However, the fiscal deficit was larger than expected under the program. The overperformance on NDA resulted from the overperformance on NFA. Higher than expected reserve accumulation allowed below-ceiling NDA growth to be consistent with a larger than expected fiscal deficit and faster than expected money growth.

Figure 6. Ethiopia and Ghana: Limited Aid Impact



Source: IMF Staff reports

Note: Target data is occasionally unavailable. Wherever possible adjusted program targets are used.

Spending Exceeds Absorption

66. If the increase in government spending following an aid surge exceeds the absorption of the aid through imports, then there is a component of fiscal expansion that is not financed by aid. Instead, this component of the fiscal expansion is similar in effect to increasing government expenditures in the absence of aid. Thus fiscal and monetary policy are potentially inconsistent: the fiscal response is to spend the aid, but the lack of absorption implies a failure to use the aid to finance this spending.

67. *Given* a situation in which the fiscal authorities spend the aid and central banks are unwilling to sell the foreign exchange and thereby allow aid absorption, the question arises as to how to coordinate fiscal and monetary policies. In particular, how should the increase in the money supply associated with the aid-related expenditures be handled?

68. One option is to allow the money supply to increase. What happens next depends on the authorities' exchange rate policy. If they peg or at least resist nominal exchange rate depreciations, then inflation, and higher aggregate demand, would generate real appreciation. This in turn would eventually increase import demand. Provided that foreign exchange was eventually sold to satisfy this import demand, the foreign exchange sales would have a sterilizing impact and dampen inflation. With some delay, then, the aid would be used and absorbed.[45] Although this strategy has the advantage that aid is eventually absorbed, the period of inflation may carry costs of its own, especially in countries with a history of high inflation.[46] If, instead of defending the nominal exchange rate, the authorities allow a nominal depreciation in line with inflation, no particular pressure for absorption will emerge; instead, high inflation will depress private demand and thereby restrain absorption and real exchange rate appreciation.

69. A second option is to curtail inflation and real appreciation by sterilizing via treasury bill sales. The sale of treasury bills reduces the money supply and raises interest rates. This lowers inflation and aggregate demand, heading off the real appreciation and absorption. This strategy is likely to be particularly difficult and costly in countries with thin financial markets.[47]

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[45] This particular description of the strategy assumes that the central bank is pegging the nominal exchange rate. In a managed float, the same basic scenario could take place, but with a more complicated mix of nominal exchange rate and price adjustments.

[46] Inflation can dampen private sector confidence and hinder financial deepening, in addition to disproportionately hurting the poor.

[47] Depending on how open capital markets are, such a strategy can also be self-defeating. That is, sales of treasury bills, by raising the domestic interest rate, may attract international capital flows and appreciate the currency.

70. Mozambique, Tanzania, and Uganda each followed a combination of these options (Figure 7). In all three countries—Uganda, Mozambique and Tanzania—concerns about the negative impact of an REER appreciation on competitiveness dictated the pattern of aid absorption and the monetary response.[48] In all three countries, net foreign exchange sales by the central bank were contained to a level consistent with a depreciating nominal exchange rate. Because the respective governments simultaneously increased domestic expenditures, this injection of liquidity led to inflationary pressures and various episodes of attempted sterilization through treasury bill sales.

71. In Tanzania and Uganda, the authorities were largely successful in keeping inflation in check, with underlying CPI inflation never exceeding 10 percent during the aid-surge period. However, in both cases this was achieved at the expense of squeezing private sector investment through the sale of government paper during some periods.[49] In Tanzania, the treasury bill rate rose from 2.6 percent in September 2002 to 7.6 percent by end-2003, causing inflation to fall from almost 10 percent to under 2 percent. In Uganda two episodes of treasury bill sterilization pushed rates very high (over 20 percent in early 2001 and end-2003).

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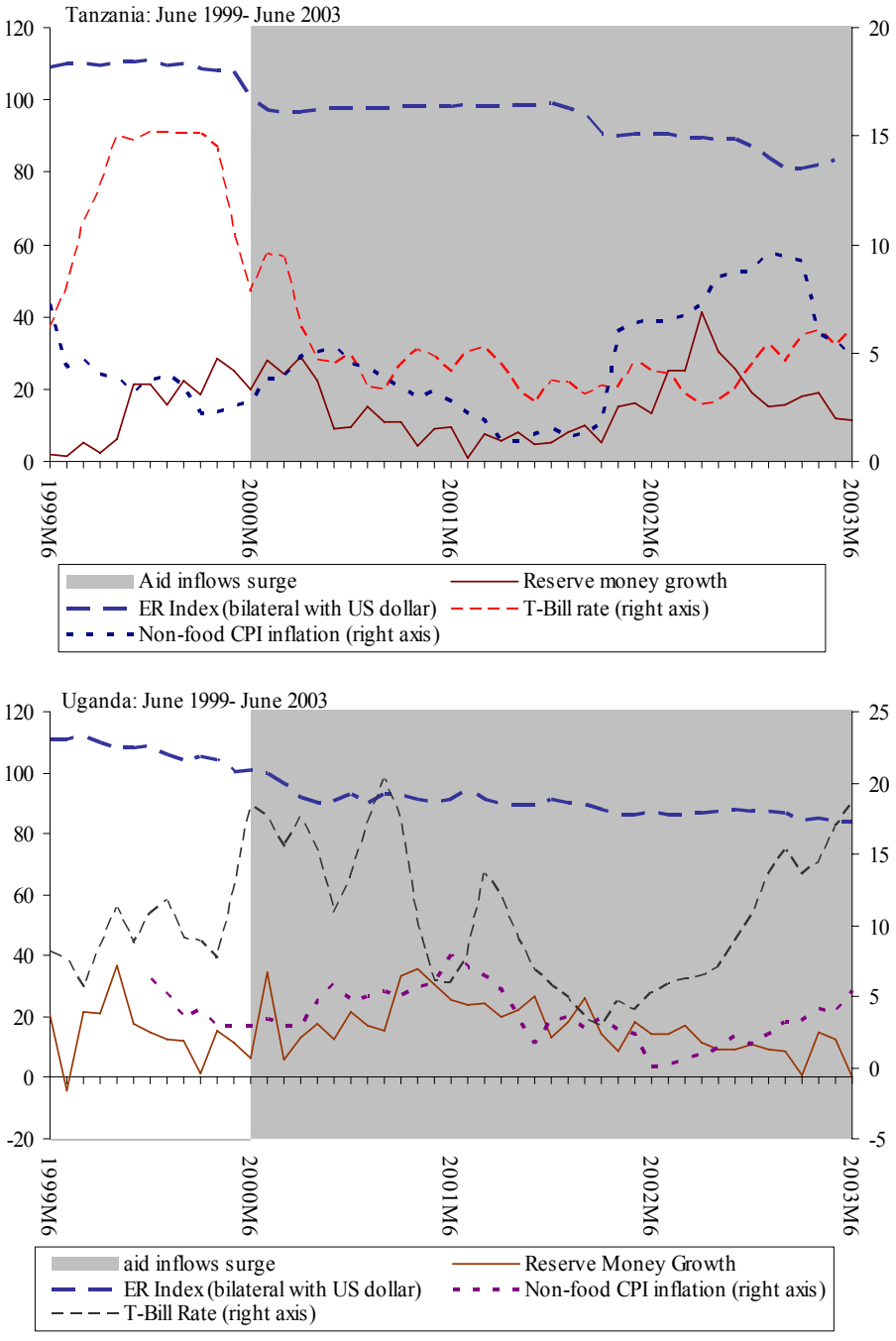
[48] In Uganda, this concern was magnified by the simultaneous terms-of-trade shock; an appreciating REER would have further reduced earnings in the coffee sector, with possible adverse consequences for poverty, and may have hindered the expansion of non-coffee exports. In addition, the central bank was concerned that the commercial banks' appetite for foreign exchange would be limited, putting a limit on sterilization through foreign exchange sales.

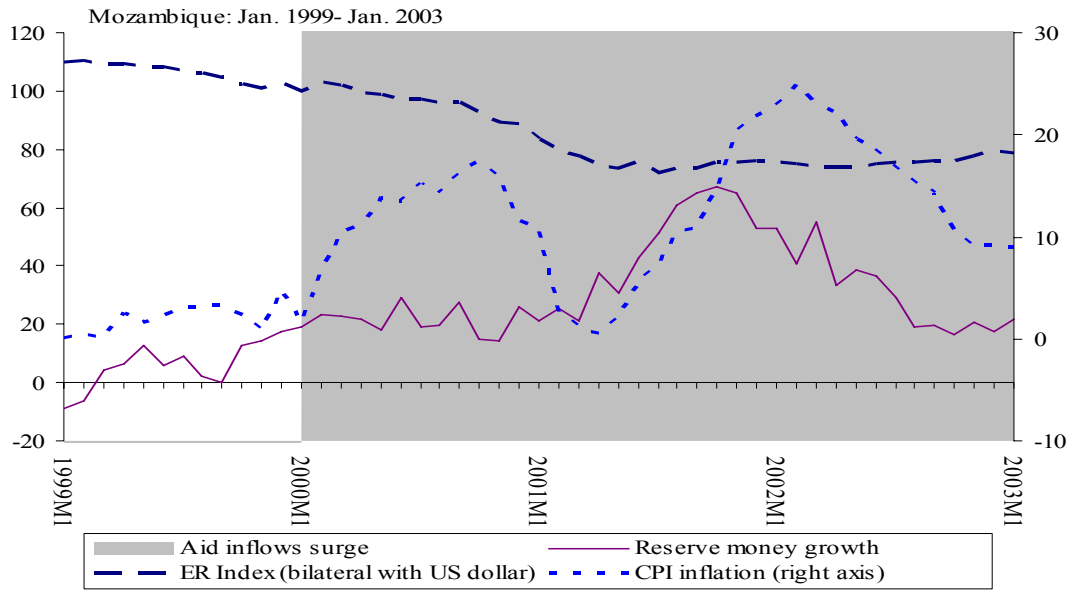
[49] It is difficult to ascertain by how much the private sector was squeezed, due to the absence of a counterfactual. In Tanzania, private sector investment fell from an average of 12.4 percent of GDP in the pre-surge period to 11.6 percent in the aid-surge period. In Uganda, the private investment ratio improved from 11.2 percent to 13.9 percent, but given that interest rates rose substantially during the sterilization episodes, it is possible that more improvement may have occurred in the absence of treasury bill sterilization.

Figure 7a. Tanzania and Uganda: Monetary Indicators



Source: IMF staff reports, country authorities

Figure 7b. Mozambique. Monetary Indicators



Source: IMF staff reports, country authorities

72. In Mozambique, domestic expenditures rose much more rapidly than in the other countries.[50] Government expenditures in the aid-surge period were 6.7 percentage points of GDP, higher than in the pre-surge period. Despite more aid absorption than the other countries, the fiscal expansion also needed to be accommodated by more monetary loosening than in the other countries. Reserve money growth shot up from about 7 percent per annum before the aid surge to 26 percent in 2000 and 53 percent in 2001. Inflation followed suit, peaking at well over 20 percent in early 2002. The high level of inflation contributed to a nominal depreciation and currency substitution throughout the period. From 2002 onwards the authorities allowed more sterilization through foreign exchange and treasury bill sales, bringing down reserve money growth. In addition, rapid GDP growth, perhaps partly in response to the fiscal expansion, led to an increase in the demand for money, and inflation was brought under 10 percent by 2003.

[50] This was partly in response to the floods of early 2000, which caused widespread devastation.

73. Again, PRGF program targets suggested greater sales of foreign exchange by the central bank (lower NIR targets), and hence greater absorption of the aid inflows in all three countries (Figure 8). This would have reduced the need for sterilization through treasury bills, helping to avoid crowding out of private sector investment in Tanzania and Uganda, and arresting the nominal depreciation and currency substitution in Mozambique.

74. This would have been a more suitable response to the surge in aid inflows.[51] Unlike Ethiopia and Ghana, the level of import coverage afforded by gross reserves was quite high in all countries, with reserves accumulating steadily throughout the period. In Mozambique and Uganda, this would have relaxed the need for open-market operations and the consequent steep rise in the treasury bill rate and interest payments.[52] In Mozambique, more foreign exchange sales would have reduced inflation through two channels: through the resulting decline in the growth of base money, and through arresting the sharp nominal depreciation.

75. In Tanzania, an early response focused on sterilizing through treasury bill sales was largely abandoned subsequently in favor of allowing the money supply to increase. For a year or two, little inflation, real exchange rate appreciation, or absorption resulted. Eventually, as inflation increased and excess liquidity built up in the banking system, the authorities turned towards selling foreign exchange to sterilize the monetary injection associated with aid-related spending. This resulted in a sharp rise in absorption and some real exchange rate appreciation. In effect, the authorities moved towards a delayed spend-and-absorb strategy.[53]

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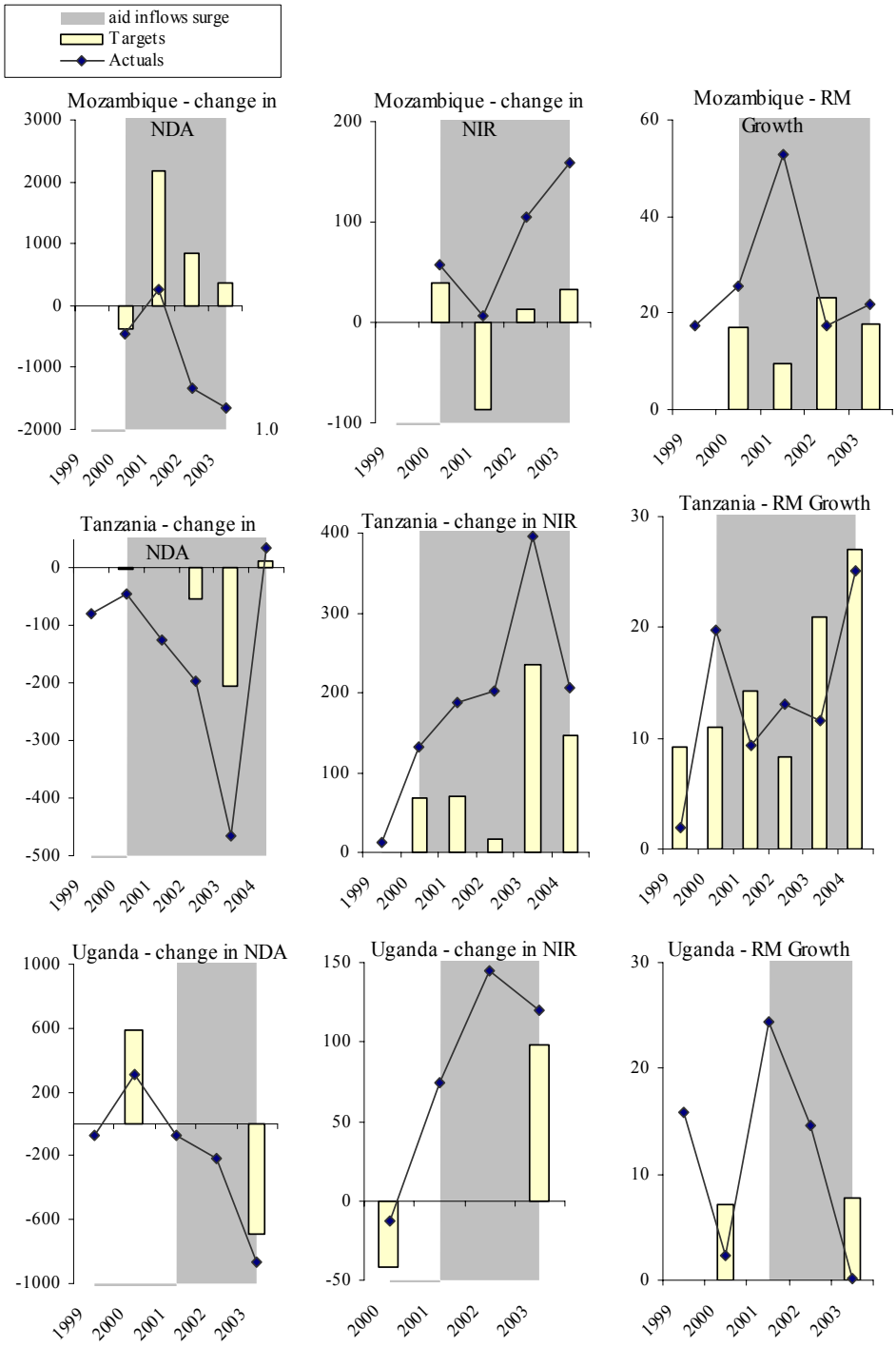
[51] Alternatively, in all three countries, domestic expenditures could have been reduced to bring spending in line with absorption. This would have curtailed liquidity and reduced inflationary pressures, but the aid would serve no purpose other than augmenting international reserves (which were already at comfortable levels).

[52] In Mozambique interest payments on domestic debt rose from almost zero in 2000 to 6.7 percent of GDP in 2003, and in Uganda they rose from 2.9 percent of GDP to 8.2 percent over the same period (Table 7).

[53] Ethiopia in the latter part of its aid-surge period also observed an increase in absorption. This resulted from an increase in spending as well as an avoidance of aggressive treasury bill sterilization in the face of the aid-related liquidity surge.

Figure 8. Mozambique, Tanzania and Uganda: Spending Exceeds Absorption



Source: IMF Staff Reports
Note: Target data is occasionally unavailable. Wherever possible adjusted program targets are used.
Note: In Uganda, the 2000 target for NDA is for the banking system.

IV. Conclusions and Policy Implications

A. Summary of Findings

Were there significant macroeconomic constraints on aid absorption?

76. Yes, in the sense that in all countries absorption fell significantly short of the increment in aid inflows. Although there is considerable variation from year to year, on a cumulative basis no country entirely absorbed the increased level of aid.[54] Absorption ranged from over half for Mozambique to zero for Ghana and Tanzania. Despite the conjecture that to absorb and spend is generally the best use of aid, no country in the sample systematically pursued this strategy.

Was Dutch disease a problem?

77. There is no evidence in the sample of significant real exchange rate appreciation as a result of a surge in aid. This is consistent with the pattern of aid absorption noted above; if aid is accumulated in reserves, then there is no need for a real exchange rate appreciation to mediate a fall in net exports and thereby absorb the aid. Hence the conclusion that Dutch disease was not a problem ex post for any of the countries studied. Of course, part of the reason that real appreciation (and consequently, Dutch disease) was not observed is precisely because authorities were concerned with competitiveness and restricted absorption accordingly.

Why did some countries save the increase in aid, neither spending nor absorbing?

78. Two of the countries studied—Ethiopia and Ghana—neither absorbed nor spent a significant part of incremental aid. A number of related but distinct factors seemed to underlie this response. First, both countries went into the aid-surge period with a precariously low level of international reserves and a need to establish macroeconomic stability. Hence, building sufficient import coverage was one motive for accumulating the aid. Second, aid volatility probably played a role in determining absorption behavior in some years. For example, in 2003, when aid surged again in Ghana after collapsing the previous year, part of the motivation for the don't-absorb-don't-spend strategy was to protect against excessive fiscal tightening in the event of a future reduction in aid inflows. Third, non-absorption may have been governed by a desire to avoid appreciation and preserve international competitiveness and; when coupled with a policy of not increasing government expenditures, to curb inflation (in Ghana's case) or to keep inflation in check (in Ethiopia's case).

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[54] Heller and Gupta (2002) discuss a number of challenges for aid-recipient countries at both the micro and macro level that could limit the aid absorption.

Why did some countries fail to use aid to increase net imports at the same time as they increased fiscal spending? That is, why did they spend but not absorb?

79. In Mozambique, Tanzania and Uganda, and in Ethiopia over 2002-2003, government spending out of incremental aid exceeded the amount of aid absorbed. The governments of these countries increased domestic expenditures, but there was a much smaller increase in net imports. This is potentially the most problematic response to aid surges. It can create high inflation, as it did in Mozambique, or require substantial treasury bill sterilization, and hence high interest rates and increases in domestic debt, to keep inflation in check.

80. What were the main reasons for this policy response? In Ethiopia over 2002-2003, absorption was only partial even though the aid increase was largely spent, and the monetary authorities took no obvious actions to reduce absorption, such as sterilizing the associated monetary expansion. However, the monetary authorities' sales of foreign exchange of the aid inflows were dictated by the exchange rate peg to the US dollar. It would have taken further action by the authorities to absorb more of the aid.

81. In the other countries, the dominant factor behind this response appears to have been a desire to preserve international competitiveness, manifested in an unwillingness to see the nominal or real exchange rate appreciate. Thus, the central banks of each country accumulated international reserves throughout the aid-surge period, despite a relatively comfortable level of import coverage. This still begs the question of why, in the face of the desire to avoid appreciation, the aid was spent at all? One explanation may be that political pressures make it difficult to resist spending aid money. For example, donors may object to the aid they provide to be accumulated in government deposits at the central bank. Indeed, loans for projects could require a certain amount of domestic expenditures every year, at the risk of being stopped altogether.

82. These cases illustrate the risk that policies with respect to the spending of aid inflows may be inconsistent with policies on exchange rate and monetary management of these same inflows. This may be partly because the link between these two sets of issues may not be fully understood by all the relevant policy-makers. It may also be because institutional responsibilities for these two sets of issues are separated. Fiscal authorities and donors will find it entirely appropriate that aid inflows to the budget be spent. Central bank officials, on the other hand, may be more concerned about implications for the real exchange rate and the export sector. A spend-but-don't-absorb response may be an unfortunate outcome fully desired by neither party. [55]

[55] This issue raises the possibility that there is a potential cost to central bank independence in the context of aid-dependent low-income countries, as mentioned in Heller (2005).

Were aid inflows inflationary?

83. Whether the aid surges were inflationary or stabilizing depended on the macroeconomic policy reaction.

- In Mozambique, Tanzania and Uganda, aid inflows did create inflationary pressures, because the excess of spending over absorption implied an injection of domestic liquidity. In Mozambique's case the gap was particularly large, and hence the country experienced high inflation. In Tanzania and Uganda, the inflationary pressures led to various episodes of sterilization through treasury bill sales. Although inflation in these countries was consequently contained below 10 percent, this came at the cost of rising interest rates, and in Uganda's case, a rapidly rising level of domestic debt.

- In Ethiopia and Ghana, the don't-absorb-don't-spend response implied that, over the aid-surge period as a whole, incremental aid did not contribute to inflationary pressures.

- With a different policy response, aid can help reduce inflation. The strategy of absorbing but not spending was executed successfully in some years, notably in Ethiopia and Ghana in 2001. In each case it was part of a successful macroeconomic stabilization program. It was planned but not executed more generally in Ghana during 2001-2003, in part perhaps because of concerns about exchange rate appreciation but also as a reaction to the volatility of aid.[56]

B. PRGF Program Design Issues

Strategies for Reacting to Aid Surges

84. In general, monetary and NIR targets under the PRGF programs were consistent with a textbook absorb-and-spend response to aid inflows. Where macroeconomic stability had not been established or domestic debt was too high, the programs appropriately envisaged absorbing but not spending.

85. In practice, these goals typically diverged from the authorities' concerns about international competitiveness and their desire to avoid nominal appreciation. Hence, in those countries in which spending exceeded absorption—Mozambique, Tanzania, and Uganda—NIR remained consistently above the programmed path (because of a reluctance to sell foreign exchange to the extent envisaged by the program), while NDA remained below the programmed path (because of attempted treasury-bill sterilization to dampen the consequent inflationary pressures). The countries therefore did not benefit from the full extent of aid,

[56] This is broadly consistent with the conclusions of Buffie and others (2004). However, they assume aid is fully absorbed. Their empirical conclusion that aid is on average 80 percent spent in Sub-Saharan Africa also would seem to reflect a wide variety of country experiences, some with full spending and some with none. The inflationary impact evidently depends on the interaction of spending and absorption.

inflationary pressures were created, and treasury bill sterilization led to an increasingly high debt service burden on domestic debt.

86. The consistency of monetary and exchange rate policy with fiscal policy needs greater attention in cases where the authorities spend but do not absorb the aid. Typically, the Fund recommends exchange rate flexibility and foreign exchange sales when a spend-and-do-not-absorb outcome emerges. However, where countries are unwilling to follow this advice—perhaps in order to guard competitiveness—more care needs to be taken that an appropriate outcome is achieved.

- One option would be to limit spending as well, following the pattern of Ghana and, for part of the time, Ethiopia. This would have the merit of avoiding macroeconomic difficulties while saving the aid for later and would make sense if Dutch disease concerns outweigh the benefits from the absorption of aid inflows. Even here, the best response would be to work to improve the quality of public expenditures and the quality of aid. However, where aid inflows are volatile, international reserves are too low, or good projects cannot be implemented, reserve accumulation may be the most reasonable short-run response.

- Another option is to allow the monetary expansion necessary to accommodate increased expenditures, and accept inflation as the mechanism through which real appreciation occurs. This policy may work well in the short run, especially if a rapid supply response tempers inflation. In the medium term, the incremental domestic expenditures should increase the demand for imports, and the saved foreign exchange then allows the authorities to accommodate this increased import demand without running low on international reserves. In essence, this is a spend-and-eventually-absorb scenario. This requires some tolerance for a period of higher inflation to achieve the required real appreciation and, critically, a willingness on the part of the central bank to defend the nominal exchange rate against depreciation. In other words, the central bank must tolerate the real appreciation and eventually sell foreign exchange as the current account deficit increases.

- If the authorities fail to defend the nominal exchange rate, inflation will increase without causing real appreciation. This is an inferior response: the aid is not absorbed, while the highly inefficient and regressive inflation tax pays for the spending increase.

- Most of the countries in the sample—Mozambique, Uganda and, initially, Tanzania—attempted to combat inflationary pressures through treasury bill sterilization. This is another inferior response. Again, aid is not absorbed, while domestic public expenditures in conjunction with higher interest rates potentially crowd out private investment. Accordingly, where monetary expansion has not yet led to higher inflation and the nominal exchange rate remains stable, programs must exercise care before prescribing treasury bill sterilization that could prevent delayed absorption.

- Tanzania's experience illustrates how the different policy options work. The aid increases were largely spent. Initially, the monetary authorities attempted to control money growth through sterilization, raising interest rates and depressing private investment. A subsequent relaxation of monetary policy led to rapid money growth but still no inflation, real exchange rate appreciation, or absorption. Finally, more aggressive sterilization through foreign exchange sales led to an increase in absorption and some real exchange rate appreciation.

Dealing with Aid Volatility

87. Aid volatility raises a special set of issues. In general, whenever a significant increase in aid was *anticipated*, program ceilings on the government's primary balance were raised, thereby allowing greater government expenditure. Similarly, reserve targets were also consistent with absorbing expected increases in aid flows.

88. When there was a deviation from the anticipated aid path, however, programs were more cautious about spending the "excess" aid in most cases. This is because the programs often included adjusters that would fully limit the spending (and absorption) of surprise aid.[57] A symmetric response to aid shortfalls would imply allowing a full increase in domestically financed spending when aid shortfalls emerged. However, in most cases the PRGF-supported programs limited additional domestic financing of the budget in cases of shortfalls.[58] In practice, however, these adjusters were not a constraint because the budgetary aid outcomes were broadly in line with projections (except in Ghana in 2001).

89. Further consideration should be given in individual cases to whether such an asymmetric response to aid shocks is appropriate. In general, aid volatility should presumably be smoothed by saving some of the aid in high-aid years (both fiscally and in terms of reserve accumulation, that is neither spending nor absorbing) and dissaving (that is running down reserves and increasing the deficit after aid) when aid shortfalls emerge. Against this logic must be balanced the temptation to treat positive shocks as permanent and negative ones as temporary, in which case such a policy would lead to a run-down of reserves. Clearly, the level of reserves may itself be an important factor in deciding whether to have symmetric or asymmetric adjusters—countries with lower reserves have less scope to smooth negative aid shocks.

90. Critically, effective smoothing requires coordinated fiscal and monetary policy responses. Taking the opportunity of a temporary aid surge to build reserves may make sense

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[57] In three out of five sample countries, spending of excess aid was limited to zero, through adjusters on net domestic financing.

[58] For example, in Ethiopia and Ghana, additional domestic financing was restricted to 50 percent of the aid shortfall. Since both countries completely restricted the spending of excess aid, the adjusters in each case were asymmetric.

but generally only if accompanied by increased budgetary savings as well. Otherwise, the aid surge leads to an increase in the budget deficit that is effectively domestically financed.

V. Final Considerations

91. The key long-run strategic choice is whether to use the aid—by absorbing and spending—or not, in which case the aid should be neither absorbed nor spent. In the long run, the only sensible options for the aid recipient are to absorb and spend the aid, or to forgo the aid entirely. To absorb and not spend can be very helpful in stabilizing the economy, as it permits a reduction in domestic debt and/or inflation without the fiscal contraction that this would normally require. It cannot be a feasible long-run strategy, however, as domestic debt stocks cannot fall indefinitely, and also because donors typically would not accept that aid proceeds be saved by the recipient government. To spend and not absorb also is not a desirable long-run strategy because it implies permanently rising domestic debt stocks or a permanent, large jump in the inflation tax.

92. The cases studied in this paper have shed little light on which of the two long-run options should be pursued**.** First, the aid surges reviewed are, so far, no more than three or four years long. Second, in most cases the authorities have not pursued an absorb-and-spend approach, so that there is little evidence on the implications even over this shorter period. Clearly, however, the widespread desire to avoid real appreciation while also increasing aid-related expenditures raises questions about the direction in which to proceed: towards increased absorption or reduced aid-related expenditures.

93. In considering this question, it may be helpful to review the nature of macroeconomic absorptive capacity constraints. Frequently, abstract macroeconomic concepts such as inflation and the real exchange rate misalignment are posed as macroeconomic constraints that limit the ability of a country to spend aid on building schools or roads or fighting HIV/AIDS.

94. However, the real issue is not a trade-off between allowing more inflation and hiring more nurses. The real question is how the productive resources in a country—its workers, natural resources, and physical capital—are to be deployed. Aid raises this question because it allows more domestic resources to be devoted to building physical and human capital at home or to satisfying consumption needs, because fewer domestic resources are needed for producing exports or import substitutes. To the extent that there are domestic projects carrying a high rate of return, or that have an ameliorating impact on poverty, this reallocation of resources is beneficial. The real exchange rate appreciation that may result is not, in itself, a macroeconomic cost of using aid, but rather part of the mechanism whereby aid is useful, because it may be required to draw resources out of the traded goods sector.

95. When aid comes in the form of grants, the opportunity cost for the recipient of absorbing and spending aid is the foregone use of domestic resources, particularly in the traded goods sector. The traded goods sector—especially non-traditional exports—may play a special role in generating productivity growth. If so, the aid may lower growth by slowing

the growth in that sector. It may also have adverse consequences for poverty by squeezing margins in traditional exports. A related but distinct potential cost has to do with the unpredictability of aid. For example, if aid inflows are high now but fall in the future, then in the presence of transactions costs and imperfect capital markets it may be difficult to resuscitate export firms crowded out by the aid.[59]

96. The critical strategic question for aid recipients is how to balance these costs and benefits. The question of when the aid-financed investments cease to become sufficiently productive is closely related to the concept of absorptive capacity. The rate of return to investments will likely decline as the rate of investment rises—the best projects should be the first undertaken. Moreover, resources will be drawn out of other uses, and this will likely become progressively costlier—the least-well-used resources should be the first to be drawn away. The implication is that there may be a level of investments beyond which the rate of return will be lower than that achieved in the alternative uses.[60] Absorptive capacity has been reached when aid-financed investment do not yield enough to justify the resources used to produce them.

97. If the judgment is made in a particular situation that the costs of absorbing and spending outweigh the benefits, what is to be done?

98. One possible solution is to recognize that absorptive capacity cannot be taken as given. It is critical to make expenditures more effective, including by improving project choice and expenditure management, and more broadly the overall policy environment.[61] Attention should be focused on how, and how fast, to scale up aid so as to minimize competitiveness problems, for example by focusing on ways to use aid to increase productivity. A carefully designed and scaled-up investment program may raise the rate of return while minimizing the cost for the traded-goods sector. An investment program aimed at improving productivity in the medium term may result in a traded goods sector even larger than it would have been without the aid, as the productivity gains resulting from better roads, education or health may outweigh the effects of the real exchange rate appreciation.[62] Similarly, aid spent directly on non-competitive imports may create fewer tensions with an export-led growth strategy. For example, using aid to import factors of production used in the export sector (e.g., chemical fertilizer) would not tend to create pressure on the real exchange rate**.** However, raising absorptive capacity is easier said than done, and the stakes are high: if the aid-related spending turns out not to be effective, not only is the aid wasted, but scarce domestic resources were misallocated and the traded-goods sector shrunk.

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[59] The same considerations apply when aid arrives in the form of concessional debt, except that the opportunity cost of aid includes the need to repay the debt. As a result, the risks are higher: if aid is poorly used or Dutch disease effects are strong, the debt burden will be hard to bear.

[60] Adler (1965), Guillaumont (1971), and Berg (1983) are early treatments.

[61] Bevan (2005).

[62] Bourguignon and others (2005).

99. Another possibility is to save the aid until it can be effectively used. This would involve accumulating reserves and avoiding an increase in the budget deficit net of aid. This solution has two major problems. First, it is politically hard to limit government spending of the local-currency counterpart to the aid inflows—after all, the aid has been given and the needs are great. This would lead to the spend-and-not-absorb policy denigrated previously. Second, a country that saves aid inflows in this fashion would alienate donors, who might understandably decide to reallocate the aid to a more eager recipient. Saving a large part of an aid surge is particularly appropriate when there is a concern that the aid boom will prove temporary; however, "to treat aid as temporary is to risk making it so."[63]

100. Donors can help resolve some of these tensions by improving the quality of aid. Aid that is less tied and for which the administration uses up fewer scarce management resources in the recipient country would be more useful. Equally importantly, aid that is more predictable, and in particular that can be relied on over the medium term, can be spent and absorbed more effectively without the otherwise valid concern that its disappearance will leave the recipient with unsustainable expenditures and an overvalued real exchange rate. Aid that buffers temporary negative shocks may also be more readily used, insofar as stabilization of the exchange rate and aggregate demand in the face of a temporary contraction would not tend to raise competitiveness concerns.

101. The strategic question of how to best absorb and spend aid in the long run is one about which the Fund can provide only supportive guidance. However, the long run famously never arrives. In the meantime, the authorities in aid-recipient countries must balance a complex set of objectives involving fiscal policy and exchange rate and reserve management. But one message is simple: a given aid dollar can be used to build reserves or to increase the fiscal deficit but not both. The cases reviewed in this paper suggest that trying to do so may make aid less effective.

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[63] Adam and Bevan (2003).

METHODOLOGY FOR SAMPLE SELECTION

102. For each country in the sample, the paper examines the pattern of net aid inflows, which are defined as gross inflows (including debt relief) less amortization, interest payments, and arrears clearance.[64] In particular, the paper identifies a year/period in which net aid inflows increased substantially, and a detailed analysis of the policy responses to increased inflows and macroeconomic outcomes for that year/period and succeeding years is conducted. While gross aid flows may be a better aggregate for analyzing donors' leverage in policy dialogue, net aid inflow is a more appropriate measure for assessing macroeconomic effects of a scaling up of aid. The focus in this study was on countries characterized by:

1. A relatively sound policy record
2. A large rise in net aid inflows
3. Net aid inflows that comprise a significant percent of GDP.

103. The avoidance of the worst performers in terms of institutions and economic policies was driven by a desire to draw lessons of relevance for situations in which, broadly speaking, policy-making is not clearly denominated by macroeconomic disarray, misgovernance, or post-conflict reconstruction. The focus is on how to help those countries that are best positioned, institutionally and in terms of the policy framework, to absorb large quantities of aid. The criteria used were the World Bank's indicator of quality of economic institutions and policies (the CPIA). Only those countries with a CPIA ranking in the third quartile and above were considered.

104. Second, a country must have experienced a significant rise in the net aid inflows, as a percentage of GDP. The quantitative screen was for a rise in the net aid/GDP proportion by at least 1 percentage point compared to a period identified by the data as the pre-surge period.

105. The period at which aid may have begun to rise varies across countries. To divide the 1996-2003 period into two sub-periods of pre-surge and ongoing-surge, the "breakpoint" was found that minimizes the sum of squared deviations between annual aid levels and within-period average aid levels. In some cases, aid flows rose linearly, so there was no obvious breakpoint. In these cases, the breakpoint was subjectively and uniformly identified as 2000.

106. Third, to focus on cases where aid is macroeconomically central, net aid inflows should be large relative to the economy receiving it. The screen applied to capture this feature was that only countries for which net aid was at least 10 percent of GDP over the post/ongoing surge period were considered.

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[64] Gross inflows include all the resources a low-income country receives in grants (including HIPC debt relief) and loans.

107. Excluding small-island economies and countries that were emerging from either a major civil conflict, or who were not PRGF-eligible, this left seven countries, all African, listed in Table I.1. Of these, Mauritania was excluded because of a history of significant misreporting. Although Malawi emerged from the quantitative screens, its aid "surge" was in 1998 and reflected a temporary dip in aid flows from the previous year. In contrast to the other countries in the sample, there was no significant and sustained increase in aid, relative to previous periods. Although Ethiopia does not rank in the top two quintiles during 2001-03, it is an interesting case since international financial institutions and bilateral donors are evaluating it as a pilot case for scaling up of aid. As a result, Ethiopia, Ghana, Mozambique, Tanzania, and Uganda were selected.

Table I.1 Aid Flows as a Percent of GDP: Changes and Levels 1996-2003

	Aid Surge Breakpoint Year 2/	Net Aid – Change Over the Surge Period 1/	Net Aid – Level Following Initial Surge 1/
Ethiopia	2001	11.4	22.1
Ghana	2000	3.0	11.5
Malawi	1998	7.8	24.7
Mauritania	2001	6.6	28.2
Mozambique	2002	6.4	33.0
Tanzania	2002	1.4	13.7
Uganda	2000	2.5	13.5

1/ Using net aid flow data from the OECD DAC.
2/ Where this year came after 2001, 2000 was selected as the breakpoint for the calculations.

Table I.2. World Bank CPIA Quintile Rankings

	World Bank CPIA score 2001	World Bank CPIA score 2002	World Bank CPIA score 2003
Ethiopia	Third	Third	Third
Ghana	Second	Second	Second
Malawi	Second	Third	Third
Mauritania	First	First	First
Mozambique	Second	Third	Third
Tanzania	First	First	First
Uganda	First	First	First

Table I.3. Official Development Assistance (ODA), Net
(In percent of GDP)

	CPIA Ranking Quintiles 1/	ODA Average 1996-99	ODA Average 2000-03
Albania	Third	9.8	6.7
Armenia	First	12.5	10.5
Azerbaijan	Second	3.5	4.1
Bangladesh	Second	2.7	2.3
Benin	Second	10.2	9.6
Bolivia	Second	8.6	8.8
Burkina Faso	Second	14.4	13.1
Burundi	Fifth	9.1	22.8
Cambodia	Fourth	10.3	11.6
Cameroon	Third	5.1	5.8
Central African Rep.	Fifth	11.9	6.2
Chad	Fourth	13.8	10.3
Congo Dem.Rep.	Fourth	2.6	31.7
Congo, Rep.	Fourth	9.5	1.9
Cote d'Ivoire	Fourth	5.7	4.0
Eritrea	Fourth	21.0	36.2
Ethiopia	**Third**	**10.7**	**18.0**
Gambia	Fourth	9.0	14.1
Georgia	Third	7.8	7.4
Ghana	**Second**	**8.5**	**11.6**
Grenada	First	2.9	3.0
Guinea	Fourth	8.7	7.1
Guinea-Bissau	Fifth	45.8	39.4
Guyana	Third	20.0	12.3
Haiti	Fifth	9.9	5.5
Honduras	First	9.1	7.6
Kenya	Third	4.3	3.9
Kyrgyz Rep.	Third	15.9	12.8
Laos	Fifth	19.6	15.1
Lesotho	Third	7.6	7.3
Madagascar	Second	13.7	8.7
Malawi	**Third**	**20.9**	**24.7**
Mali	Second	15.8	13.6
Mauritania	**First**	**21.3**	**26.5**
Moldova	**Third**	**4.3**	**8.1**
Mongolia	Third	23.4	20.5
Mozambique	**Third**	**26.6**	**33.0**
Nepal	Second	8.0	7.2
Nicaragua	First	32.3	17.7
Niger	Fourth	13.5	13.8
Pakistan	Second	1.3	2.4
Papua New Guinea	Fifth	7.6	7.1
Rwanda	Second	20.8	19.1
Senegal	First	11.1	8.6
Sierra Leone	Fourth	15.1	39.3
Sri Lanka	First	2.5	2.3
Sudan	Fifth	2.0	2.2
Tajikistan	Fourth	10.6	13.5
Tanzania	**First**	**11.6**	**14.6**
Togo	Fifth	8.3	3.9
Tonga	Fourth	16.2	14.7
Uganda	**First**	**11.0**	**13.6**
Vietnam	First	4.2	4.5
Yemen	Second	5.4	3.9
Zambia	Third	16.2	16.1
Zimbabwe	Fifth	4.3	2.2

Sources: OECD aid database; and *WEO.*

1/ The World Bank's measure of quality of institutions and policies. The first quintile is the best ranking.

DUTCH DISEASE: THEORY AND EVIDENCE

108. Dutch disease is related to the idea that productivity growth is particularly high when resources are devoted to exports, particularly of non-traditional products, because of learning-by doing or other dynamic externalities in these relatively competitive and technologically advanced industries. The decline of the export sector, mediated by an increase in the demand for and price of non-tradables, may lower the attainable growth path of the economy. For this argument to hold, dynamic externalities in the export sector would have to outweigh the benefits of capital accumulation associated with aid-financed investment (as well as any related productivity growth). A slightly different argument is premised on imperfect capital markets and hysteresis: if aid is temporarily high and crowds out export firms through real appreciation, it may not be possible to resuscitate these firms once aid falls and the real exchange rate depreciates.

109. The theoretical case for Dutch disease is ambiguous. For example, when learning-by-doing externalities can take place also in the non-tradable sector, the long-run adverse impact will be limited, even if the real exchange rate appreciates in the short term.[65] In the longer run, the investments in physical and human capital, both in the government and in the private sector, begin to bear fruit and productivity increases not only in the tradable sector but also in the non-tradable sector, potentially offsetting the initial loss of competitiveness.[66]

110. The effects of Dutch disease would be enhanced if the aid-recipient economy has weak financial markets. For example, in thin foreign exchange markets, volatile and lumpy aid disbursements can cause overshooting in the exchange rate or interest rate. Similarly, in the short term, when the real exchange appreciation due to excess demand for non-tradables is not yet compensated by the increase in productivity, firms may be forced out of business if they do not have access to adequate credit to smooth out the shock. Temporary overshooting of the actual real exchange rate after an increase in aid may therefore be more damaging than the longer-term shift in the equilibrium real exchange rate.

111. Despite a substantial body of theoretical literature on the implications of Dutch disease from aid inflows, empirical work is limited—particularly in low-income countries. Recent cross-country studies find some evidence for the real appreciation effect. For example, Elbadawi (1999) finds that a 10 percent increase in the aid-to-GDP ratio appreciates the real exchange rate by about 1 percent. Individual country studies, however, offer mixed results. Some (e.g., Malawi and Sri Lanka) find that aid inflows cause real appreciation, but

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[65] Torvik (2001).

[66] Nkusu (2004a) discusses the theoretical determinants of Dutch disease and emphasizes the mitigating role of excess domestic capacity. Adams and Bevan (2003) describe a non-monetary theoretical model and calibrate it for Uganda.

others (e.g., for Ghana, Nigeria, and Tanzania) find that aid flows are related to real depreciations.[67]

112. In a related literature, some papers find evidence of a significant detrimental impact of real appreciation on exports, particularly non-traditional exports.[68] Empirical evidence also suggests that real appreciation contributed to the widening trade deficits in four African economies.[69]

113. A recent approach is to look directly at the impact of aid on exports without attempting to trace through the real exchange rate channel. Rajan and Subramanian (2005b) examine the effects of aid in a sample of 33 countries over the 1980s and 15 countries for the 1990s. They find that export and labor-intensive manufacturing industries grew significantly slower in those countries that received the most aid, and that a 1 percentage point increase in the ratio of aid to GDP is roughly equivalent to a 4 percentage point overvaluation of the exchange rate. Arellan et al (2005) find that aid significantly depresses the export sector in a sample of developing countries.

114. The risks of Dutch disease need to be balanced against the potential benefits from the investment that aid can finance. Here, the evidence is also mixed. The benefits of public investment are not clearly established empirically, as a general matter.[70] Of course, the rate of return will depend on the particular investment and a variety of country-specific circumstances. A strong case can nonetheless be made for a higher level in poor countries.[71] While the systematic evidence for a positive growth impact of private investment is stronger, it is less clear that aid can be effectively channeled into higher private investment.

115. More broadly, a huge literature asks directly whether aid affects growth, with somewhat mixed conclusions.[72] However, there is substantial cross-country evidence that exchange rate overvaluations are one of the few policy variables that matter for growth after controlling for institutions. There is also substantial micro-based evidence on the benefits of trade and, to some extent, learning-by-doing associated with exports. Weak exchange rates may also help predict the incidence of episodes of growth acceleration.[73] Case studies that

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[67] White and Wignaraja (1992, Sri Lanka), Ogun (1995, Nigeria), Nyoni (1998, Tanzania), Sackey (2001, Ghana), and Ouattara and Strobl (2004, CFA countries), Fanizza (2001, Malawi).

[68] Sekkat and Varoudakis (2000), Elbadawi (2002).

[69] Adenauer and Vagassky (1998).

[70] Leite and Tsangarides (2005).

[71] United Nations Millennium Project Report (2005).

[72] See Clements and Radelet (2004) for results showing a positive correlation between aid and growth, as well as Rajan and Subramanian (2005a) and Easterly, Levin and Roodman (2003) for more skeptical views.

[73] Acemoglu and others (2003) present important evidence on overvaluation and growth, while Easterly, Levine and Roodman (2003) summarize the literature. Hausmann and others (2004) discuss the role of depreciated real exchange rates in sparking growth accelerations. Berg and Krueger (2003) summarize some of the literature on learning-by-doing and exports.

examine the entire chain from aid through export performance to final outcomes include Nkusu (2004b), who finds little sign of Dutch disease in Uganda.

116. On balance, the evidence on Dutch disease is mixed. Presumably, the seriousness of the problem and the benefits of aid-financed investments depend on the particular circumstances of each country. A country with strong dynamic externalities in the tradable goods sector may with to consider carefully the level of aid it can absorb without triggering too much real appreciation. It may also wish to seek aid in forms that are less likely to induce real appreciation.[74] It can safely be concluded, however, that the risk of Dutch disease raises the stakes: if aid-financed investments have poor rates of return, not only is the aid wasted, but there is a risk that overall growth may be impaired.

[74] This is harder than it seems. It is sometimes argued that aid in kind has no impact on the real exchange rate. This is true, however, only if the transferred good is one for which there was no existing effective demand. If the good transferred was already demanded domestically, then increasing the good's supply would depress the price of tradables relative to non-tradables, leading to real appreciation. On the other hand, the transfer of a good for which there is no pre-existing demand is clearly of limited utility in general (although not always: for example, one could imagine aid taking the form of expensive drugs or treatments for which there is no effective pre-existing demand).

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