

# INTERNATIONAL Poverty Centre

Conference Paper March, 2007

*The International Poverty Centre is jointly supported by the Brazilian Institute for Applied Economic Research (IPEA) and the Bureau for Development Policy, United Nations Development Programme, New York.*

## Conference paper

### **MONETARY POLICIES FOR AN MDG-RELATED SCALING UP OF ODA TO COMBAT HIV/AIDS**

**Matías Vernengo**  
Assistant Professor, Department of Economics,  
University of Utah

Prepared for the Global Conference on Macroeconomic  
Policies to Reverse the HIV/AIDS Epidemic,  
Brasilia, 20-21 November 2006

Jointly Sponsored by the International Poverty Centre and the HIV/AIDS Group of UNDP

The views expressed in IPC publications are those of the authors and do not necessarily reflect the views of IPC, IPEA or UNDP.

**Copyright© 2007**

**United Nations Development Programme  
International Poverty Centre**

International Poverty Centre  
SBS – Ed. BNDES, 10º andar  
70076 900 Brasilia DF  
Brazil

povertycentre@undp-povertycentre.org  
www.undp-povertycentre.org  
Telephone +55 61 2105 5000  
Fax +55 61 2105 5001

### **Rights and Permissions**

All rights reserved.

The text and data in this publication may be reproduced as long as the source is cited.  
Reproductions for commercial purposes are forbidden.

The International Poverty Centre disseminates these **Conference Papers** to encourage the exchange of ideas about development issues. These studies are signed by the authors and should be cited accordingly. The findings, interpretations, and conclusions that they express are those of the authors. They do not necessarily represent the views of the International Poverty Centre, IPEA or the United Nations Development Programme, its Administrator, Directors, or the countries they represent.

**Conference Papers** are available online at <http://www.undp-povertycentre.org> and subscriptions can be requested by email to [povertycentre@undp-povertycentre.org](mailto:povertycentre@undp-povertycentre.org)

CONFERENCE PAPER

**MONETARY POLICIES FOR AN MDG-RELATED SCALING  
UP OF ODA TO COMBAT HIV/AIDS:  
AVOIDING DUTCH DISEASE VERSUS SUPPORTING  
FISCAL EXPANSION**

Matías Vernengo\*

Assistant Professor, Department of Economics, University of Utah

Prepared for the Global Conference on Macroeconomic  
Policies to Reverse the HIV/AIDS Epidemic,  
Brasilia, 20-21 November 2006

Jointly Sponsored by the International Poverty Centre and the HIV/AIDS Group of UNDP

**ABSTRACT**

This Conference Paper discusses the best monetary policy to manage the macroeconomic effects of an MDG-related scaling up of aid inflows to address the HIV/AIDS pandemic. Many economists have expressed concern that a substantial scaling up of aid inflows would lead to greater inflation and real exchange rate overvaluation. Thus, in such a context, they often advocate that central banks adopt restrictive monetary policies. However, such policies often make overvaluation worse by driving up the interest rate and reducing domestic liquidity. This paper suggests that the evidence on the overvaluation effects of aid inflows is thin, at best. Instead of advocating restrictive policies, this paper maintains that monetary policies should maintain low rates of interest, increase overall liquidity in the economy and maintain a relatively depreciated currency. Such policies will help support the expansion of fiscal space that will be necessary for reaching the MDG target of halting and reversing the HIV/AIDS pandemic. A substantial increase in ODA directed towards combating HIV/AIDS will lead to an expansion of government spending on domestic goods and services. But the impact of such spending will not necessarily be inflationary in economies, such as those of many low-income countries, which have significant excess capacity, i.e., underemployed labour and other productive factors.

---

\* I would like to thank Yongbok Jeon for his research assistance and several participants of the Conference on "Gearing Macroeconomic Policies to Reverse the HIV/AIDS Epidemic," in particular Fernando Carvalho, for their comments and fruitful discussions. I would also like to thank Terry McKinley, Acting Director of IPC, who served as an internal IPC peer reviewer for this paper, and Alfredo Saad-Filho, Chair of the Department of Development Studies, SOAS, University of London, who served as an external peer reviewer, for their extensive comments. The opinions expressed in this paper, however, are entirely the responsibility of the author.

## FOREWORD

This Conference Paper on “Monetary Policies for an MDG-Related Scaling up of ODA to Combat HIV/AIDS” was commissioned for the Global Conference on “Gearing Macroeconomic Policies to Reverse the HIV/AIDS Financing”, which was held in Brasilia, 20-21 November 2006. It is the second in a four-part series that contributes to the on-going debate on macroeconomic policies in low-income countries that restrict the scaling up of financial resources for an expanded HIV/AIDS response.

The conference was jointly sponsored by the HIV/AIDS Group of the United Nations Development Programme, New York and the International Poverty Centre, Brasilia. It brought together representatives from government and civil society, the IMF, HIV/AIDS specialists and economists in a lively and productive dialogue on the policy and practical governance requirements for macroeconomic stability in HIV-affected countries.

The publication of two additional papers, one on fiscal policies and the other a country case study of Kenya, will follow suit. We hope that these Conference Papers will make a valuable contribution to the ongoing dialogue and debate on this critical issue, and help motivate further studies at the country level.

Elhadj Sy  
Director, HIV/AIDS Group  
UNDP, New York

Terry McKinley  
Acting Director, International Poverty Centre  
Brasilia

## 1 INTRODUCTION

At the International Conference on Financing for Development, held in Monterrey in March 2002, the international community agreed to raise Official Development Assistance (ODA) to 0.7 percent of industrial countries' GDP, from approximately a third of that amount. Tripling ODA is consistent with the Millennium Development Goals (MDGs). As a result, it is appropriate to discuss what would be the effects of the resulting surge in aid flows to developing countries.

Conventional wisdom and common sense have suggested that aid was necessary to avoid poverty traps and to allow for a growth spurt in the receiving countries. Over the last decade, however, an intense debate on the effects of aid has led to a more critical view of its effects on long-term economic development. Peter Boone (1996), for example, noted that aid usually financed consumption rather than investment and, as a result, aid had relatively little impact on growth.<sup>1</sup> Burnside and Dollar (2000), on the other hand, argued that aid inflows, when associated with 'good' economic policies (i.e., low inflation and fiscal surpluses), produced higher rates of growth. Easterly, Levine and Roodman (2004) find that the positive aid-policy story became fragile in the face of an expansion of the data set in terms of years and countries.

Clemens, Radelet and Bhavnani (2004), adding one more twist to the debate, divide aid into three categories: (i) emergency and humanitarian aid (likely to be negatively correlated with growth); (ii) aid that affects growth only over the long term, if at all, such as aid to support democracy, the environment, health or education (likely to have no relationship to growth over four years); and (iii) aid that plausibly could stimulate growth in four years, including budget and balance of payments support, investments in infrastructure, and aid for productive sectors such as agriculture and industry. Their focus is on the third category, and they suggest that a positive, causal relationship exists between this short-impact aid and economic growth over a four-year period. Rajan and Subramanian (2005), contrastingly, suggest that there is no evidence of positive effects of short-term aid on growth.

Reddy and Minoiu (2006), in the latest development in the ongoing debate on the effects of aid, suggest that if one separates the effects of developmental and geopolitical aid, the former shows significant positive effects on growth, while the latter would be growth-depressing. The many twists of the debate reflect the fundamental schism between those who emphasize market solutions for economic development (e.g., Peter Bauer) and skeptics who, in the tradition of the pioneers of economic development (e.g., Myrdal, Prebisch and Rosenstein-Rodan), believe that government intervention is essential to deal with market failures.

Easterly (2006) can be seen as the main author favoring market mechanisms, while Sachs (2005) is the most visible defender of the advantages of aid. Sachs (2005) provides the intellectual defense of the Millennium Development Goals (MDGs) and for the expansion of aid. Easterly has recently argued that development through aid was a failure in the past and is bound to be a mistake in the future. For him, markets are the essential vehicle for feedback and accountability, without which development is impossible. In this view aid is not just futile, but also dangerous since it ultimately encourages corruption and misuse of funds. In his words, "to put it in the baldest possible terms, the more sweatshops the better," since "as you increase the number of factories demanding labor, wages will be driven up," (apud Gross, 2006, p. 4).<sup>2</sup> In other words, nationally driven development, even if it means sweatshops, is deemed better than aid.

This Conference Paper does not discuss the overall relation between aid and economic development. Instead, it deals with one important mechanism by which aid inflows might affect growth and development. Rajan and Subramanian (2005) suggest that aid inflows lead to overvaluation of domestic currencies, and reduce external competitiveness. In this view, a type of financial Dutch Disease is behind the poor correlation between aid inflows and growth.<sup>3</sup> Some authors (e.g., Gupta, Powell, and Yang, 2006; McKinley and Hailu, 2006) have suggested that the link between aid inflows and overvaluation is weak or non-existent.<sup>4</sup>

More specifically, this Conference Paper deals with the effects of increased aid inflows associated with the treatment of HIV/AIDS, and with the best monetary policy to deal with such effects.<sup>5</sup> Several authors have shown that HIV/AIDS has significant negative effects on economic well-being that dwarf estimates that focus only on output or income (Crafts and Haacker, 2004). Also, the HIV/AIDS epidemic has significant effects on income distribution and poverty (Greener, 2004). The HIV/AIDS pandemic has become central for the prospects of many countries to be able to reduce their development gap and achieve the MDGs.

If we assume that ODA inflows associated with HIV/AIDS treatment are not significantly different from other ODA inflows, the debate on the effects of ODA inflows and what would be the correct monetary policy to deal with them gain urgency and relevance. In the absence of a curative therapy, some authors have recommended increases in funding for prevention services and treatment and care services, rather than just increased spending for antiretroviral therapy, which is the best way to prevent the premature death of the millions of people being infected with HIV each year (Stover et al, 2006). The most important effect of prevention versus curative spending is that the former implies spending on domestic services, while the latter requires large imports of foreign medication. The monetary impact of both is significantly different. Moreover, the ability to spend domestically will vary according to the availability of domestic resources. However, as Stover et al. (2006) note, greater spending on prevention would not only prevent new infections, but would also produce a net financial saving as future costs for treatment and care are averted.

The remainder of this paper is divided into three additional sections. The next, Section 2, analyzes conventional models that explain the effects of aid inflows and suggest some policy prescriptions, usually associated with Washington donors. It contrasts this approach with an alternative closure, in which appreciation is one possibility, but not the only or even the main one. Particular attention is paid to monetary policies that would reduce the adverse impacts of aid inflows. Section 3 evaluates the empirical evidence and provides some support for the view that aid inflows might not produce Dutch Disease. The last section pulls the results together and provides some guidelines for monetary policies for aid receiving countries, in particular for countries that require sizeable increases in aid inflows to finance the response to the HIV/AIDS pandemic.

## **2 THE MACROECONOMIC MANAGEMENT OF AID INFLOWS: ALTERNATIVE CLOSURES**

Capital inflows can be used to import foreign goods or be exchanged for domestic currency and spent on domestic non-tradable goods and services. It is usually said that 1) aid is absorbed when the current account deficit increases, either because more is imported or increased domestic demand causes producers to export less; and 2) aid is spent when the fiscal

deficit increases, either as a result of higher government expenditure or lowered domestic revenue. Most of our discussion will be associated with aid being spent. Aid inflows in the case of the HIV/AIDS epidemic are likely to be partially spent on non-tradable goods and services (e.g., doctors and nurses) and partially absorbed (e.g., spent on imported anti-retroviral medication). Hence, it is to some extent unavoidable to associate aid inflows with budgetary transfers that would lead to higher government spending in the short run.

The International Monetary Fund (IMF) has been concerned with the effects of aid inflows on macroeconomic performance, and some of its researchers have developed a framework to analyze those effects. For example, Prati, Sahay and Tressel (2005) and Prati and Tressel (2006) provide a framework to analyze the appropriate monetary policy for countries receiving large aid inflows.<sup>6</sup> The authors note that, historically, aid inflows are very volatile and that monetary policy must be used to minimize the effects of aid volatility on foreign exchange markets and the balance of trade. Also, the authors suggest that aid inflows might affect consumption patterns and productivity growth, and that, through the latter, might have an effect on growth.

The main problem of aid inflows, from a conventional wisdom point of view, is that they might lead to an appreciation of the domestic currency (Rajan and Subramanian, 2005). In other words, the aid inflows, which increase the supply of foreign exchange, may be exchanged for domestic currency, increasing the relative demand for the domestic currency, and leading to appreciation (under a flexible exchange regime). This is particularly problematic when nominal wages in the tradable goods sector are relatively rigid since this condition would lead to reduced competitiveness. On the other hand, in a fixed exchange rate system, aid inflows might push up the price of scarce resources – in particular, skilled labor – also rendering the economy less competitive in international markets. According to this view, foreign aid can hurt the tradable goods sector and lead to lower rates of growth. Hence, receiving aid might be akin to the discovery of natural resources and provoke Dutch Disease.

In such a case, conventional wisdom suggests that monetary policy should sterilize the effects of aid inflows on money supply. Monetary contraction should be used to reduce the effects on exchange rates, control consumption growth and build up international reserves to support imports and consumption during periods of reduced inflows (Prati and Tressel, 2006). Central to this view is the notion of a relatively rigid supply constraint. In other words, aid inflows are simply spent on domestically produced goods and services, but their supply remains fixed. In the absence of spare capacity in the economy, additional domestic spending financed by aid will simply squeeze out the existing domestic demand for goods and services.

The main ideas of this analytical approach can be summarized by a simple model of the monetary sector. Money supply ( $M^s$ ) is a positive function of the domestic value of the trade balance ( $eZ$ ),<sup>7</sup> the net change in government bonds used in open market operations ( $\Delta B$ ), and the aid inflows expressed in domestic currency ( $e\Delta A$ ). Thus, we have:

$$(1.1) \quad M^s = eZ - \Delta B + e\Delta A$$

The money demand ( $M^d$ ) function is a positive function of the level of activity ( $Y$ ), and a negative function of the trade balance and aid inflows. This is due to the presumption of a fixed aggregate supply, based on the assumptions of perfect competition and full

employment. The idea is that a higher positive trade balance implies lower consumption and reduced money demand. Money demand can be represented as:

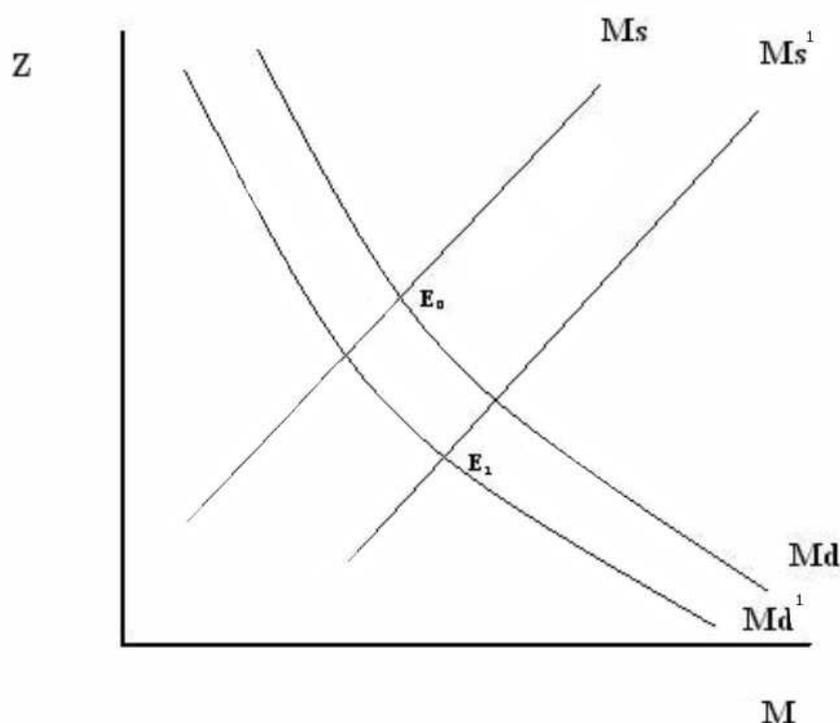
$$(1.2) \quad M^d = f(Y, Z, A)$$

Thus, equilibrium in the money market can be determined by the intersection of an upward sloping money supply curve and a downward sloping money demand curve (Figure 1). This determines the money stock and the trade balance in the economy ( $E_0$ ). An increase in aid inflows leads to a shift in the money supply curve ( $M_s'$ ). This effect is associated with a worsening of the trade balance since the increase in money supply reduces interest rates and stimulates consumption. Consumption, in turn, promotes higher imports and a negative impact on the trade balance.

Money demand decreases for two reasons. First, inflows are partially used by the government to invest. Since money has no liquidity role for the public sector, money demand falls. Also, if inflows are expected to increase productivity – in part as a result of increased public sector investment – then there is an expectation of higher future consumption, which allows agents to save less. The reduction in savings, in turn, leads to higher rates of interest, and reduced money demand. The most likely final effect of the aid inflows is, in this view, an increase in money supply and a worsening of the trade balance. In other words, the aid inflows worsen the external performance of the economy and lead to lower rates of growth in the long-term. This is the basis for the conventional view on monetary policy, which suggests that monetary policy should be designed to reduce the negative impact of aid inflows on competitiveness.

FIGURE 1

**Monetary Equilibrium**



Prati, Sahay and Tressel (2005, p. 26) suggest that if the central bank sells bonds to sterilize the increase in money supply, then this would undo the negative effects of aid inflows, particularly when the effects of inflows on productivity are small. Monetary tightening would reduce the relative demand for domestic currency, and increase the demand for bonds, by increasing interest rates, and would tend to depreciate the local currency.<sup>8</sup> Also, the recommendation to increase fiscal balances to sterilize the monetary impact of a surge in aid inflows indicates that fiscal policy can also be used to deal with the effects of inflows. For example, Prati and Tressel (2006, p. 11) argue that foreign aid can be given as budgetary support, and fiscal spending can be delayed, which would maintain or even improve fiscal balances.<sup>9</sup> The authors seem to assume full employment. This is an odd assumption for poor countries. According to this view, aid inflows that are not absorbed, namely – used to import foreign goods – should, to a great extent, be kept as reserves, to avoid expanding domestic demand excessively – that is, beyond the capacity limits of the economy. In other words, fiscal policy should also be contractionary and complement the contractionary monetary stance. In fact, in this view, the macroeconomic stance should neutralize the impact of aid inflows.

The adverse implications of delaying spending in the case of the HIV/AIDS pandemic should not be minimized. There are significant health and fiscal advantages to front-loading aid. The first expected benefit of front-loading is the reduction of the impact of the disease burden. The second advantage is that there are likely to be continuing fiscal benefits to a recipient country with lower levels of the disease. The last crucial benefit of front-loading is that it might add to the predictability of spending, which is crucial for treatment.<sup>10</sup>

To a great extent, the policies suggested by the IMF model, i.e., contractionary monetary and fiscal policies, ultimately result from its closure, that is, from the assumptions underlying the basic structure of the model. For example, standard structuralist models with a Keynesian closure would not predict that a monetary contraction would lead to depreciation. In fact, the opposite would be the case: a monetary contraction would lead to an increase in domestic interest rates, which would attract more capital inflows and bring about exchange rate appreciation. The classic example of such a policy was the Volcker monetary contraction of the late 1970s, which led to a significant appreciation of the US dollar.<sup>11</sup> We propose an alternative closure along structuralist-Keynesian lines, in which the transmission mechanisms between aid, the exchange rate and output are different from those of the IMF model described above.

The model assumes that monetary policy is conducted by controlling the interest rate rather than monetary aggregates, although it would not make a great difference if the central bank actually controlled monetary aggregates. The dynamics of foreign exchange depend on the difference between domestic interest rate ( $i$ ) and foreign interest rate ( $i^*$ ) according to the assumption of uncovered interest parity,<sup>12</sup> and the difference between the actual exchange rate ( $e$ ) and the target exchange rate ( $e^*$ ). Most developing countries would have a managed float (fear-float), in part as a result of the pass-through effects of real depreciation on domestic prices. The target exchange rate reflects the fear-float strategy. Thus, we have:

$$(1.3) \quad \dot{e} = \phi(e^* - e) + \sigma(i^* - i)$$

In other words, when the target exchange rate is above the actual exchange rate, the latter must increase (depreciate) in order to adjust to equilibrium. Similarly, if the foreign interest rate is higher than the domestic interest rate, then capital flight would ensue and the domestic currency would depreciate.

Monetary policy is conducted by controlling the short-term interest rate and following a Taylor rule that takes expected inflation ( $p^*$ ), the desired level of output ( $Y^*$ ), and the long term interest rate on bonds ( $r$ ) into consideration.<sup>13</sup> Hence, we have:

$$(1.4) \quad i = r + \dot{p}^* + \alpha(\dot{p} - \dot{p}^*) + \beta(Y - Y^*)$$

Equation (1.4) is a monetary policy rule (MP), which suggests that the central bank set the short-term rate of interest on the basis of its target inflation rate and output level. Finally, the model implies that aid inflows might affect inflation and inflationary expectations. In particular, if aid inflows are utilized to purchase goods and services with inelastic supply, prices might go up. This would affect monetary policy. For simplicity, inflation is assumed to be a function of wage costs and aid inflows:

$$(1.5) \quad \dot{p} = f(W, A)$$

From equations (1.3), (1.4) and (1.5) we can derive the partial effect of aid inflows on the exchange rate. If aid inflows are used in a significant way to purchase goods and services with an inelastic supply, domestic prices would increase. This in turn would lead the central bank to hike the domestic interest rate, which would lead to additional capital inflows and an appreciation of the currency.<sup>14</sup> It must be noted that if inflationary pressures are small or nil, and/or if the central bank does not react to the inflows, then interest rates and foreign exchange would remain relatively unchanged.

Aid inflows might lead to an appreciation of the exchange rate, as suggested in the IMF model. Contrary to the IMF model, however, contractionary monetary policy, by raising the interest rate, leads to further appreciation of the exchange rate. In particular, if sterilization leads to lower prices for bonds and higher rates of interest on bonds ( $r$ ), then this would raise the short-term interest rate and lead to an appreciation of the currency. In other words, contractionary monetary policy would compound the appreciation caused by aid inflows, and further reduce the external competitiveness of the economy. However, it is possible that aid inflows could go hand in hand with a depreciation of the currency if the effect of inflows on domestic prices is relatively small, and if money supply is not completely sterilized and, more importantly, if the central bank is not concerned about possible inflationary pressures. In this case, a looser monetary policy could be pursued in spite of the aid inflows, and lower rates of interest would lead to a depreciation of the domestic currency.

This alternative model provides a framework for the discussion about the problems caused by capital inflows, and how they affect the double task of controlling inflation and managing the exchange rate. It reveals the well known trilemma, according to which only with capital controls can the central bank both control the money supply and target the exchange rate. In the case of capital inflows that exert pressure for an appreciation of the exchange rate, if the central bank intervenes by buying foreign currency, it loses control of the domestic money supply. Sterilization, however, is always an option. This preoccupation becomes relevant only when monetary expansion caused by inflows is concomitant with inflation levels that are already above the target ( $p^*$ ) or when the level of activity is well beyond its supply limit ( $Y^*$ ). These conditions would call for a monetary contraction.

In other words, there might be a policy dilemma, in which monetary laxity is required to maintain a depreciated exchange rate but monetary contraction is required to cool an over-

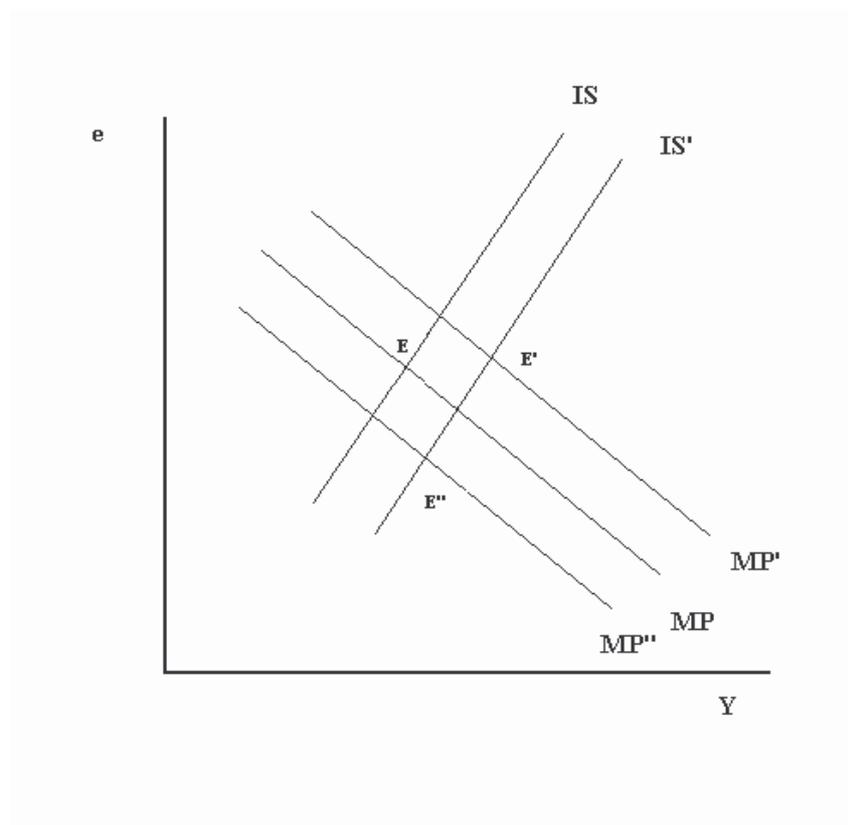
heated economy. This implies that one policy alternative would be to try to maintain the exchange rate as depreciated as possible without leading to inflationary pressures. This approach has been termed a stable but competitive real exchange rate (SCRER) strategy (Frenkel and Taylor, 2006). In the structuralist closure, an expansionary monetary policy, rather than a contractionary one, is needed to maintain a competitive exchange rate. This is probably the most significant difference between the two closures. The other important difference is related to the determination of the level of activity. The structuralist model assumes that the level of activity is demand determined--by the level of autonomous expenditures--following the principle of effective demand in traditional Keynesian fashion.

The model is closed based on the equilibrium in the goods market. It is assumed that depreciation, even though it might produce contractionary adjustments in the short run, would lead to an improvement of the external accounts. Also, the level of activity is positively correlated with autonomous spending ( $G$ ), in conventional Keynesian fashion, and with foreign aid ( $A$ ), seen mainly as budgetary transfers to the public sector. Hence, we have:

$$(1.6) \quad Y = f(A, G, e)$$

Equilibrium is represented in Figure 2 by the interception of the goods market equilibrium (IS), resulting from equation (1.6), and the monetary policy rule (MP) derived from equations (1.3) and (1.4). An increase in aid inflows would move the IS curve down and to the right and would initially move the MP curve down and to the left. However, the final effect on the MP curve would be ambiguous.

FIGURE 2

**Alternative Closure**

Aid inflows might prompt a contractionary monetary policy, moving the MP curve down and to the left if inflationary impacts are significant; or if the central bank believes that they might be significant, it could raise domestic interest rates and thereby sterilize the increase in the money supply. However, if there are no visible inflationary pressures or the central bank is less concerned with inflation, then the interest rate might fall, eliminating the pressures for appreciation to some extent. If the monetary authority does not sterilize, and supports fiscal expansion with lower rates of interest, then the MP curve may actually shift up and to the right.

It seems that both the target inflation rate and the target output level are central to understanding the direction in which the MP curve would move. If the central bank is concerned about inflation, because either the inflation or output levels are above the target levels, then sterilization would take place, and the money supply would not increase. The new equilibrium would be at  $E''$ , with an appreciated currency and a level of activity close to the original level. On the other hand, if the central bank is willing to let the money supply expand, the new equilibrium would be at  $E'$ , with a slightly depreciated currency, and a significantly higher level of activity with respect to the original equilibrium  $E$ .

This suggests, in contrast to the IMF model, that the monetary authority's perception of inflationary pressures is central for the management of aid inflows. If inflationary pressures are seen as strong, sterilization and contractionary monetary policy, as suggested by Prati and Tressel (2006), might be warranted. On the other hand, if inflationary pressures are weak, and the economy needs to expand, monetary policy can be expansionary. This would complement expansionary fiscal policy, which would be associated with the use of aid inflows as budgetary transfers designed to expand spending. Ultimately, the appropriate monetary policy depends on policy makers' perceptions. But their perceptions might be misleading and thus turn out to be unreliable guides for economic policy making.<sup>15</sup> Hopefully, their perceptions could be influenced by the empirical evidence. Well known mainstream research has demonstrated, for example, that inflation levels below 40 percent are likely to have little significant effect on the level of activity (Bruno and Easterly, 1995). This should not be understood as an endorsement of high inflation, but as a cautionary note on the risks of excessive preoccupation with inflationary pressures.

In other words, the alternative model suggests that monetary policy should be concentrated on maintaining low rates of interest and a depreciated currency, along the lines of Frenkel and Taylor's SCRER strategy, without allowing inflation to get out of control. In this closure, the central bank acts as the 'fiscal agent' of the State, allowing aid inflows to expand fiscal efforts to combat the HIV/AIDS pandemic. Perhaps the only important agreement between the conventional and the alternative views is that, in the face of volatile aid inflows, the central bank should modestly accumulate reserves in order to reduce the volatility of the exchange rate market and add predictability to domestic spending--effects that, as noted before, are crucial in the case of countries facing an HIV/AIDS pandemic. The conventional and structuralist approaches imply significantly different monetary policies, but the empirical evidence about the effects of aid inflows is also crucial to determine the correct course for monetary policy.

### 3 AID AND OVERVALUATION: EMPIRICAL EVIDENCE

Most discussions on the effects of aid inflows directly evaluate its impact on growth and development variables. Some authors have suggested that the fundamental mechanism by which aid inflows affect economic growth is through the effect on the exchange rate and external competitiveness. Rajan and Subramanian (2005, p. 6) maintain that they found supportive evidence for links between aid inflows and overvaluation of the real exchange rate. They argue that overvaluation is positively correlated to aid inflows, and that the relation has become stronger over time. In particular, the correlation was stronger in the 1990s than in the previous two decades. Also, they suggest that overvaluation is positively correlated with the exogenous determinants of aid inflows, and, thus, inflows can be said to cause overvaluation.

In order to test these assertions, we utilize data for aid inflows and a real overvaluation index from Global Development Finance, World Development Indicators, and the Development Research Institute. Aid is measured as a share of gross national income (GNI), and the real exchange rate is constructed as the index, with a base of 100. Countries were selected according to data availability. The sample has 74 countries. Data start in the 1960s and are available up to 2003, but there are many missing data points. As a consequence, the time spans considered for obtaining average values vary across countries: the average values of two variables for each country can come from different time periods. An equal time span for a single country was taken for consistency. In the cases where time spans for two data series were not identical for two variables, the shortest time period available for both variables was utilized.

Also, in order to test for outliers, the Cook's distance criterion was employed. Table 1 shows the main results for the OLS cross country regression. All conventional diagnostics were carried out and the test results were robust. They appear to confirm the results of Rajan and Subramanian's previous study. Figure 3 shows the scatter plot, including the outliers.<sup>16</sup>

TABLE 1

#### Dependent Variable, Real Overvaluation (71 observations after adjustment)

Variable	Coefficient	t	P> t
Constant	104.74	20.78	0.000
Aid/GNI	1.57	2.57	0.012
R-squared 0.088		Adj-R-squared 0.074	

The adjusted R-squared is low, but that should be expected since the regression only tries to estimate the direct correlation between aid and real exchange rate overvaluation, rather than provide an explanation of exchange rate behavior. Aid has a statistically significant effect on real overvaluation. An increase of one percent in the aid-to-GNI inflow is correlated with an overvaluation of almost 1.6 percent of the domestic currency. It is important to note, however, that while an increase in one percent of the aid-to-GNI inflow is sizeable, an appreciation of 1.6 percent is relatively small. Moreover, if causality does, in fact, run from aid inflows to overvaluation, as one would expect, then for a significant overvaluation to occur, the size of aid inflows would have to be remarkably large.

In contrast to the Rajan and Subramanian (2005) study, which tested the strength of the correlation in successive decades, we tested the strength of the correlation for different continents. One might be interested in the regional impact because distinct regions of the globe would need considerably different levels of aid inflows to achieve the MDGs and deal with the HIV/AIDS pandemic.

In fact, regions might very well be defined by the prevalence of HIV/AIDS, so that one could evaluate the effects of aid inflows in countries where the pandemic is a more pressing problem. However, as a first step, the data were divided into three continents, namely: Africa, Asia and Latin America. Different regions have different histories of macroeconomic management with significant differences in monetary policy priorities. Thus, one could expect that aid inflows might have diverse effects on the real exchange rate according to region.

FIGURE 3

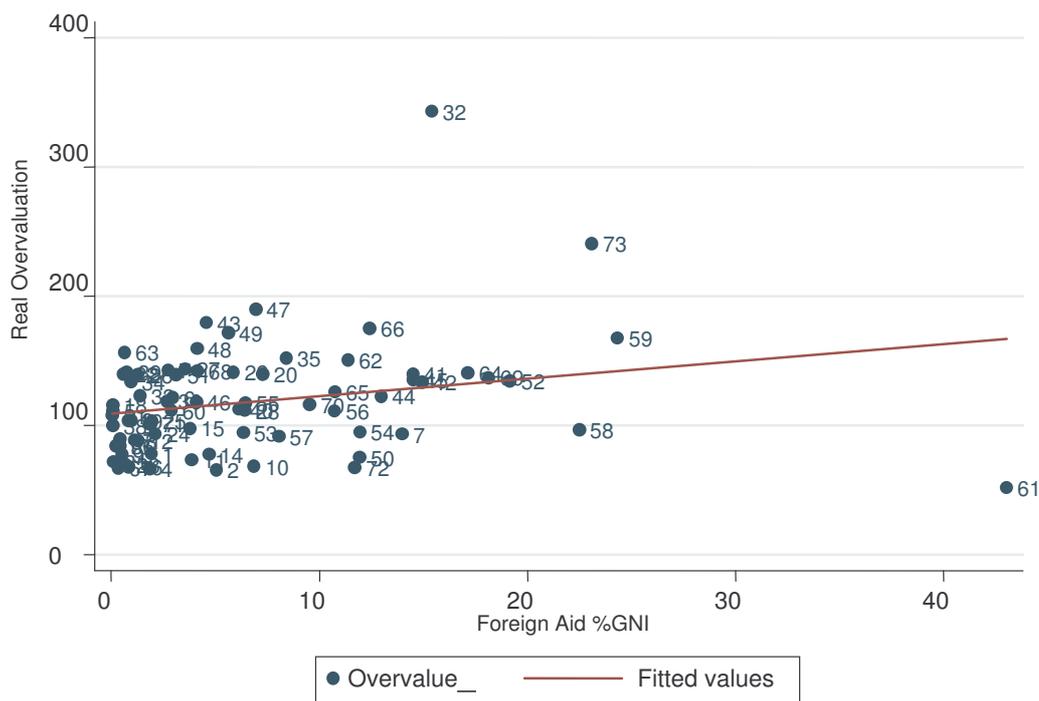
**Exchange Rate Overvaluation and Aid**

Figure 4 panels A, B and C show the partial correlations between aid and real exchange overvaluation in Asia, Africa and Latin America. There is no correlation between aid and real overvaluation in the Asian and African cross-country data. The negative correlation suggests that the opposite might be the case, and that aid inflows are associated with real depreciation. However, the correlations are not significant in statistical terms. Table 2 summarizes the econometric findings for the three regions.

The results suggest that the general positive correlation is fundamentally associated with the Latin American experience. Not only does the Aid-to-GNI ratio have the wrong sign in both Africa and Asia, but it is also statistically insignificant. In Latin America, the correlation is significant in both economic and statistical senses.<sup>17</sup> The structuralist ideas discussed in the previous section may shed some light on the Latin American experience. One possible conjecture about the strong correlation between real exchange rate overvaluation and aid inflows in Latin America might be based on a greater concern of national policymakers with high inflation in the region. The history of high inflation might have produced an environment in which central banks are overly cautious about inflationary pressures. In that case, it is likely that relatively contractionary policies might have been pursued more often in the region. Also,

the region has a long history of import substituting industrialization (ISI) policies, which were usually associated with relatively overvalued currencies. If this is the case, the Latin American experience cannot necessarily be extended to other regions.

TABLE 2

**Dependent Variable, Real Overvaluation (71 observations after adjustment)**

Variable	Africa	Asia	Latin America
Constant	132.95 (12.89)	86.51 (15.91)	89.97 (10.50)
Aid/GNI	-0.36 (-0.47)	-0.41 (-0.34)	12.07 (6.68)
R-squared	0.006	0.008	0.70

In addition, if one is concerned about the effect of scaling up aid inflows to finance the response to the HIV/AIDS pandemic, sub-Saharan Africa is the main region with which one must be concerned, as indicated by the HIV prevalence rates. Sub-Saharan Africa is home to almost 64 percent of the estimated 38.6 million persons living with Aids (Merson, 2006). It would be particularly problematic if contractionary monetary policy were used to control inflation and restrict the possible effects on the exchange rate in a region in which the evidence for overvaluation is thin, at best.

Also, the HIV/AIDS pandemic might very well have significant effects on productivity and human development (McKinley and Hailu, 2006). Taylor and Frenkel (2006, p. 5) argue that human capital development can have a positive impact on productivity, which in turn would translate into lower unit labor costs and higher competitiveness.

FIGURE 4A

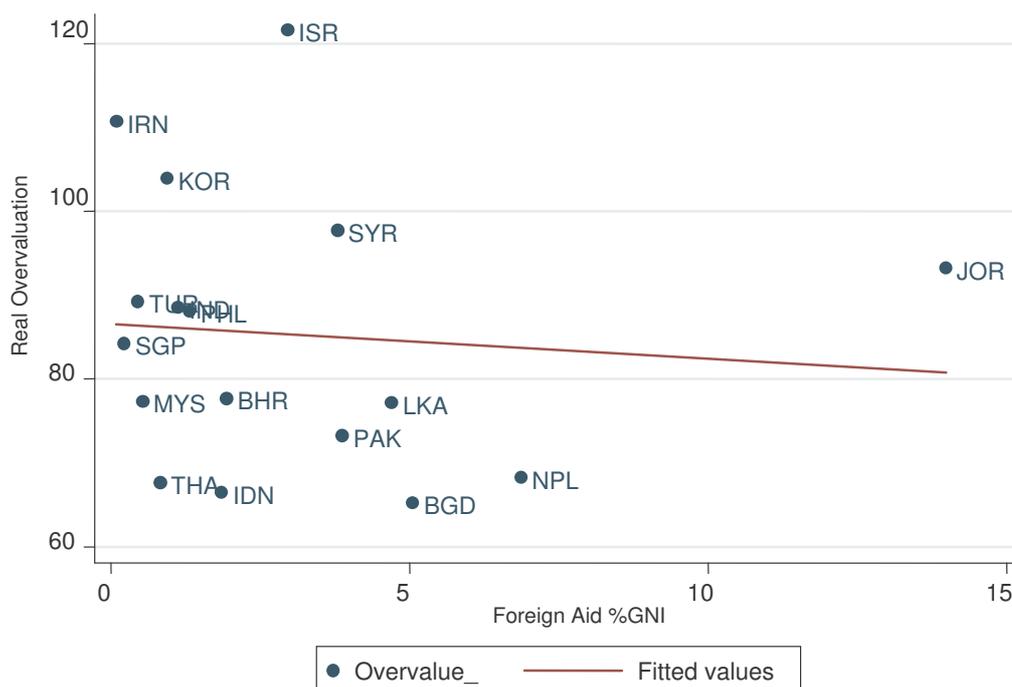
**Exchange Rate Overvaluation and Aid/GNI – Asia**

FIGURE 4B

**Africa**

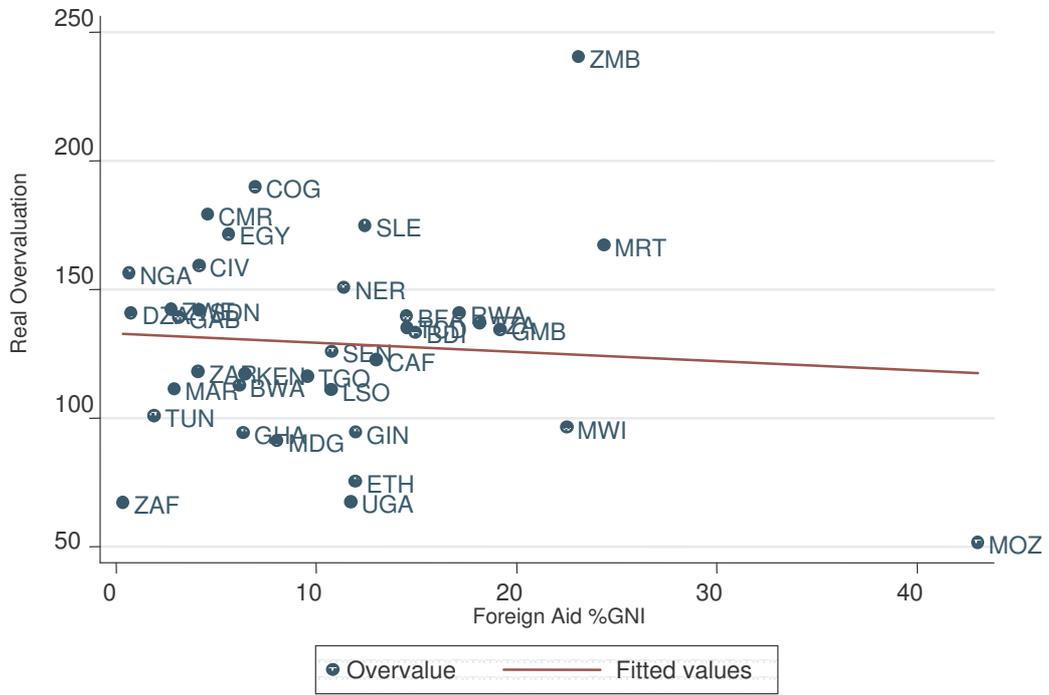
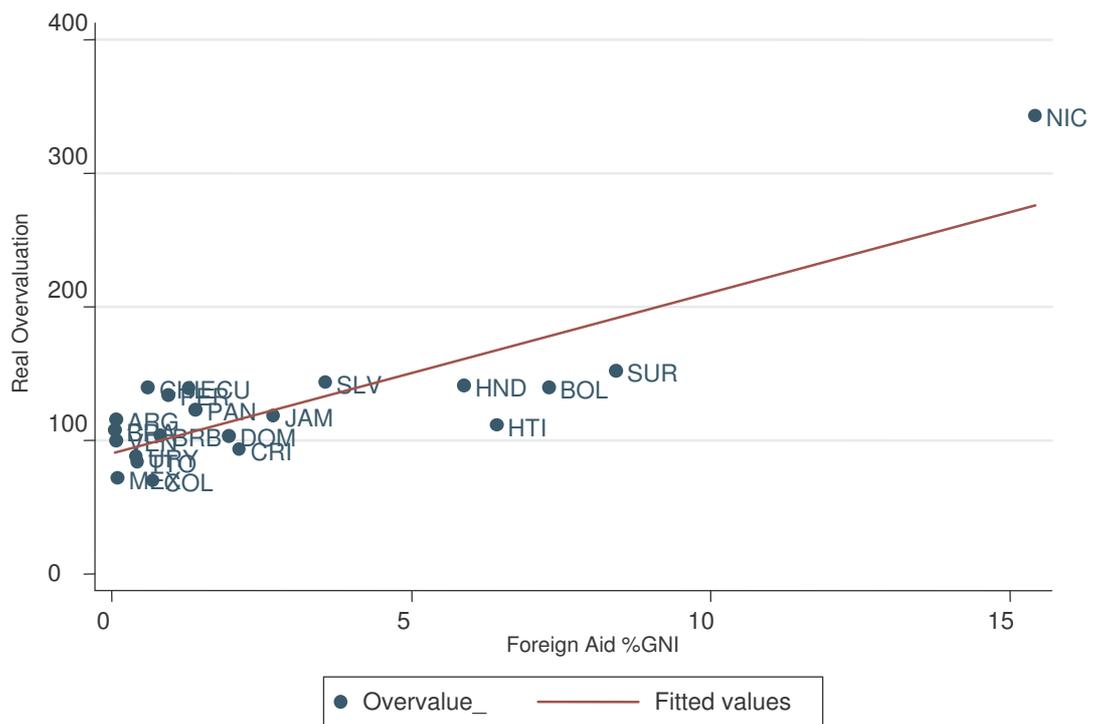


FIGURE 4C

**Latin America**



In this respect, an expansionary monetary policy that supports fiscal expansion associated with a concerted response to the pandemic might actually increase labor productivity and reduce the risks of inflation and currency overvaluation, which are often cited precisely as reasons for monetary contraction. These results would depend, of course, on the nature of the supply constraint.

This brief discussion of the empirical evidence reinforces the theoretical arguments raised in the previous section. The alternative closure presented in the previous section suggested that if appreciation and Dutch Disease were a problem, contractionary monetary policy would make these conditions worse. In addition, the empirical evidence indicates that countries with severe HIV/AIDS epidemics do not present a pattern of currency overvaluation associated with aid inflows, and hence there is even less justification for contractionary monetary policy. Monetary policy should be utilized, instead, to maintain a relatively competitive exchange rate, and to support the fiscal expansion associated with combating the pandemic.

## 4 CONCLUSION

Most people would recognize the moral imperative of the world's rich to help the world's poor. Even the anti-aid lobby accepts the notion that humanitarian aid flows are important for averting crisis, but they believe that aid should not be used for long-term economic development. Moreover, an increasing sense of skepticism regarding the beneficial effects of aid inflows has become apparent in the international community, including donors. For example, Abhijit Banerjee (2006) is skeptical of aid as we know it, and argues that donors are shooting in the dark because they lack solid evidence on the type of aid that actually works. Furthermore, those who believe that aid can be effective still suggest that significant macroeconomic instabilities could arise and that restrictive macroeconomic policies would have to be used to reduce instability. In particular, there is concern that aid inflows would lead to real exchange rate overvaluation.

Researchers associated with the International Monetary Fund have suggested that in the case of Dutch Disease, monetary policy should be contractionary in order to sterilize aid inflows and reduce the effects on the exchange rate. However, the alternative model presented here indicates that sterilization and monetary contraction are not necessarily warranted, and might even make matters worse. In fact, in order to maintain a relatively depreciated exchange rate, expansionary monetary policy is often needed. This conclusion flows from the alternative model and the weight of empirical evidence.

Furthermore, the evidence on the overvaluation effects of aid inflows is thin, at best. In this context, instead of avoiding Dutch Disease, monetary policy should be used to accommodate fiscal expansion. It should maintain low rates of interest, increase overall liquidity in the economy and maintain a relatively depreciated currency in order to create larger fiscal space for HIV/AIDS policies. Spending on domestic goods and services might not necessarily be inflationary if there is a significant amount of excess capacity in the economy—as is often the case in low-income countries.

The most intractable problem is not associated with the effects of scaling up aid inflows, but with their volatility. Volatility might have significant health effects since interruptions in HIV/AIDS treatment can lead to stronger strains of the virus, and make treatment more complicated and expensive. In that respect, both the conventional model and the alternative model suggest that accumulation of reserves might be a useful mechanism to avoid excessive fluctuation of the exchange rate and maintain the predictability of fiscal spending.

## REFERENCES

- Amsden, Alice (2006), "Another Big Problem Must Be Taken into Account: the Lack of Skilled Jobs," *Boston Review*, July-August.
- Banerjee, Abhijit (2006), "Making Aid Work: How to Fight Global Poverty Effectively," *Boston Review*, July-August.
- Boone, Peter (1996), "Politics and the Effectiveness of Aid," *European Economic Review*, 40(2), pp. 289-329.
- Bruno, Michael and William Easterly (1995), "Inflation Crisis and Long Run Growth," NBER Working Paper No 5209, August.
- Burnside, Craig and David Dollar (2000), "Aid, Policies, and Growth," *American Economic Review*, 90(4), pp. 847-68.
- Clemens, Michael, Steven Radelet and Rikhil Bhavnani (2004), "Counting Chickens When They Hatch: the Short-Term Effect of Aid on Growth," *Center for Global Development Working Paper No. 44*.
- Craft, Nicholas and Markus Haacker (2004), "Welfare Implications of HIV/AIDS," in *The Macroeconomics of HIV/AIDS*, edited by Markus Haacker, Washington, DC: International Monetary Fund.
- Easterly, William (2006), *The White Man's Burden*, New York: Penguin Press.
- Easterly, William, Ross Levine and David Roodman (2004), "New Data, New Doubts: Comment on 'Aid, Policies, and Growth' by Burnside and Dollar," *American Economic Review*, 94(3), pp. 774-80.
- Frenkel, Roberto and Lance Taylor (2006), "Real Exchange Rate, Monetary Policy and Employment," *DESA Working Paper No 19*.
- Greener, Robert (2004), "The Impact of HIV/AIDS on Poverty and Inequality," in *The Macroeconomics of HIV/AIDS*, edited by Markus Haacker, Washington, DC: International Monetary Fund.
- Griffin, Keith and John Enos (1970), "Foreign Assistance: Objectives and Consequences," *Economic Development and Cultural Change*, 18(3), pp.313-327.
- Gross, Daniel (2006), "Fighting Poverty with \$2-a-Day Jobs," *New York Times*, Sunday, July 16, BU, p. 4.
- Gupta, Sanjeev, Robert Powell and Yongzheng Yang (2006), *The Macroeconomic Challenges of Scaling Up Aid to Africa: a Checklist for Practitioners*, Washington DC, International Monetary Fund.
- Hausmann, Ricardo, Lant Pritchett and Dani Rodrik (2005), "Growth Accelerations," *Journal of Economic Growth*, No 10, pp. 303-29.
- McKinley, Terry and Degol Hailu (2006), "The Macroeconomic Debate on Scaling up HIV/AIDS Financing," *International Poverty Centre, Policy Research Brief*, No 1.
- Merson, Michael (2006), "The HIV/AIDS Pandemic at 25: The Global Response," *New England Journal of Medicine*, 354(23), June 8, pp. 2414-17.

- Prati, Alessandro, Ratna Sahay and Thierry Tressel (2005), "Can Monetary Policy Make Foreign Aid More Effective?" *International Monetary Fund*, processed.
- Prati, Alessandro and Thierry Tressel (2006), "What is the Most Effective Monetary Policy for Aid-Receiving Countries," *DESA Working Paper*, No 12.
- Rajan, Raghuram and Arvind Subramanian (2005), "What Undermines Aid's Impact on Growth?" *IMF Working Paper*, No 126.
- Reddy, Sanjay and Camelia Minoiu (2006), "Development Aid and Economic Growth: a Positive Long-Run Relation," *DESA Working Paper*, No 29.
- Sachs, Jeffrey (2005), *The End of Poverty*, New York: Penguin Books.
- Stover, John *et al.* (2006), "The Global Impact of Scaling Up HIV/AIDS Prevention Programs in Low and Middle Income Countries," *Science*, Vol. 311, March, pp. 1474-76.
- Vernengo, Matías (2006), "Money and Inflation," in *A Handbook of Alternative Monetary Economics*, edited by Philip Arestis and Malcolm Sawyer, Cheltenham, Edward Elgar.
- White, Howard (1992), "The Macroeconomic Impact of Development Aid: A Critical Survey," *Journal of Development Studies*, 28(2), pp.163-240.
- Younger, Stephen (1992), "Aid and the Dutch Disease: Macroeconomic Management When Everybody Loves You," *World Development*, 20(11), pp.1587-1597.
- .

## NOTES

1. The debate on the effects of aid inflows is not new; see, for example, Griffin and Enos (1970). For a broad review of the previous debate, see White (1992).
2. Alice Amsden (2006) provides a different critique of the 'aid lobby.' For her, aid is necessary but not sufficient, and she suggests that "if aid is not tied to job-enhancing investment – especially in skilled jobs – it will raise welfare but not income."
3. Hausmann et al. (2005, p. 305) argue that growth accelerations tend to be positively correlated with real exchange rate depreciations.
4. See also Younger (1992).
5. Two other Conference Papers deal with fiscal and exchange rate policies. Hence, comments on fiscal and exchange rate policies will be restricted to the interactions of these policies with monetary policy.
6. It is obvious that the IMF is not a monolithic institution and that there is a moderate amount of dissent within the staff. However, we believe that the model developed by Prati and Tressel (2006) and the empirical conclusion in Rajan and Subramanian (2005) are representative of the dominant views of the IMF.
7.  $Z$  is the trade balance and  $e$  is the nominal exchange rate defined as the domestic price of foreign currency.
8. It appears that the authors assume that capital inflows would not increase in response to high domestic interest rates.
9. An alternative would be to provide aid for specific projects rather than channel it into broad budgetary support. Some authors, however, believe that corruption and rent-seeking would undermine the project approach (Banerjee, 2006).
10. The Government of the United Kingdom has proposed to establish an International Finance Facility (IFF) to front-load aid funds by borrowing on the capital markets and guaranteeing the loans on the basis of future aid commitments. Such a proposal would increase the predictability of funds, which would presumably be less volatile than regular ODA flows.
11. It must be noted that the US is a large country and it can print world money. But it is still the case that if developing countries hike the rate of interest, they would attract capital inflows and this would lead to an appreciation of the currency. The Southern Cone experience of the 1970s is an example of such an effect.
12. Uncovered interest parity is a term used to describe the notion that the exchange rate responds to the differential of foreign and domestic interest rates.
13. Note that the Taylor rule does not necessarily imply that there is a rigid natural output level, but that the central bank behaves as if there is one. In other words, even if there is room for a non-inflationary expansion of the economy, if the central bank chooses to raise the interest rate, it would impose a limit on the level of economic activity. For a discussion of central bank policy behavior, see Vernengo (2006).
14. If the effect of higher domestic interest rates on capital inflows in low-income developing countries is small, as may be the case, then the appreciation associated with the inflows would be also relatively small.
15. For example, in the United States during the 1990s, there was an accepted belief that the level of unemployment could not fall below six percent, the so-called natural rate, without leading to accelerating inflation. Alan Greenspan was perceptive enough not to raise the rate of interest even though the level of unemployment fell below four percent. As is well known, inflation did not, in fact, accelerate.
16. The regression explicitly avoids choosing an arbitrary threshold for the HIV/AIDS epidemic (e.g., affecting more than five percent of the population) or for the Aid/GNI level (e.g., more than two percent). That helps avoid any sample selection bias, and suggests that if the relation is strong, it should hold for the whole sample.
17. It is worth noticing that in Asia and Latin America, the Aid/GNI ratios are considerably smaller than in Africa. If aid inflows lead to overvaluation, one would expect that it would be more readily visible in the latter region.



**International Poverty Centre**

SBS – Ed. BNDES, 10º andar  
70076 900 Brasilia DF  
Brazil

[povertycentre@undp-povertycentre.org](mailto:povertycentre@undp-povertycentre.org)  
[www.undp-povertycentre.org](http://www.undp-povertycentre.org)  
Telephone +55 61 2105 5000  
Fax +55 61 2105 5001