

INTERNATIONAL Poverty Centre

Conference Paper number 1 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

MANAGING THE EXCHANGE RATE CONSEQUENCES OF AN MDG-RELATED SCALE-UP IN HIV/AIDS FINANCING

John Serieux
Department of Economics University of Manitoba

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

CONFERENCE PAPER

MANAGING THE EXCHANGE RATE CONSEQUENCES OF AN MDG-RELATED SCALE-UP IN HIV/AIDS FINANCING

John Serieux*

Department of Economics University of Manitoba

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

The prospect of scaling up aid inflows to address the challenges of the HIV/AIDS pandemic is looked on with some trepidation by many policy makers who dread potential Dutch disease effects. This paper argues that, given the effect of the epidemic on labor and human capital and the potential productivity gains from restoring human development, proper management of aid flows can preclude the nightmare scenarios that have been contemplated in the literature. In fact, if aid is frontloaded in order to expand capacity by building necessary infrastructure, institutions and human capital, welfare and productivity benefits will be maximized. The macroeconomic 'disturbances', such as inflation and appreciation of the exchange rate, which are concomitant with increased aid absorption are usually necessary for the appropriate adjustment of the economy and should be neither feared nor countered in the short run. Correction and mitigation is called for only if these macroeconomic disturbances escalate or persist. However, there is some justification for recipient countries to build up a modest reserve cover in the early stages of the scale up (of aid receipts) in order to allow for subsequent mitigation of any volatility of aid flows.

* The author thanks Terry McKinley, Acting Director of the International Poverty Centre, for serving as an internal peer reviewer of this paper and James Heintz, of the Political Economy Research Institute at the University of Massachusetts-Amherst, for serving as an external peer reviewer. Both gave extensive comments on the paper. However, the author remains responsible for its final contents.

FOREWORD

This Conference Paper on “Managing the Exchange-Rate Consequences of an MDG-Related Scale-up in HIV/AIDS Financing” 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 first 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 three additional papers on monetary policies, fiscal policies, and 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

The projected increases in aid for HIV/AIDS-related initiatives, combined with aid directed at achieving other Millennium Development Goals (MDGs), is likely to mean a rapid scale up in development assistance for many countries currently experiencing high HIV/AIDS infection rates. The prospect of this potentially rapid scale up elicits a sense of trepidation in many of these countries because it portends the possibility of macroeconomic instability and/or Dutch disease effects that may undermine growth.

The concern about macroeconomic instability derives largely from the implicit and explicit conditionality contained in country Poverty Reduction Strategy Papers (PRSPs) and related Poverty Reduction and Growth Facilities (PRGFs). Based on the presumption that a stable macroeconomic environment is critical for growth, these countries are directed to maintain single digit inflation levels, low budget deficits and balance of payments equilibrium. There are inherent contradictions, as well as significant policy challenges, in strict adherence to these prescriptions in the face of large aid inflows.

The theoretical literature on Dutch disease argues that, in the same way that a natural resource windfall can lead to an appreciated exchange rate, which leads, in turn, to the demise of the export producing sector (other than the natural-resource-producing sector itself) in that country, high and sustained aid inflows have much the same effect. Though the empirical literature provides little support for the presence of that relationship, developing countries do fear that high inflows of aid may indeed prove to be a “curse” by contributing to the immiserization of their export sectors.

The true potential curse of large aid flows may not be Dutch disease but aid volatility. In the absence of attempts to manage volatility by donor agencies, countries may have to address this challenge by explicitly creating a reserve buffer that allows for some decoupling of the timing of disbursements and the timing of domestic spending of such disbursements.

It will be argued here that, with a scaling up of aid, while some real exchange rate appreciation may be inevitable (and even necessary) in the short run, the nature of these economies, the likely productivity enhancing effect of HIV/AIDS interventions and the balance of the empirical evidence suggest that any initial real exchange rate appreciation will be reversed in relatively short order. However, an inflexible approach to macroeconomic stability that does not allow for significant short-run deviations from inflation targets and interprets aid-related current account and fiscal deficits as signals of disequilibrium will undermine the short-, medium- and long-run effectiveness of aid flows.

To that end, Section II presents the justification for increasing aid inflows to countries challenged by the HIV/AIDS epidemic and Section III examines the resource implications. The fears related to large aid inflows and the macroeconomic policy context in which such flows are likely to take place are discussed in Sections IV and V respectively. Section VI outlines the theoretical underpinnings of the dominant concern with respect to large aid inflows – Dutch disease – then examines potential modifications to the theory, the empirical evidence and the (macroeconomic) management experience relating to large aid inflows. Section VII presents a proposed framework for the optimal management of aid flows. The concluding section summarizes the discussion.

2 THE JUSTIFICATION FOR HIV/AIDS-RELATED INFLOWS

Despite what may seem like a distant target date (of 2015), it can be reasonably argued that yearly progress towards the achievement of all of the Millennium Development Goals (MDGs) is, and should be, an ever pressing concern. In the particular case of the first part of goal number six – to halt and begin to reverse the spread of HIV/AIDS – the United Nations General Assembly Special Session of 2001 articulated the need for immediate action and the achievement of specified short-run targets (United Nations, 2001). That particular sense of urgency is justified by three important attributes of the disease:

- i. HIV/AIDS is still an expanding global pandemic; and
- ii. If left unmitigated, the ravages of the disease will threaten human development in general, and the achievement of several Millennium Development Goals in particular, over both the short and long term.
- iii. The HIV/AIDS pandemic also threatens economic growth.

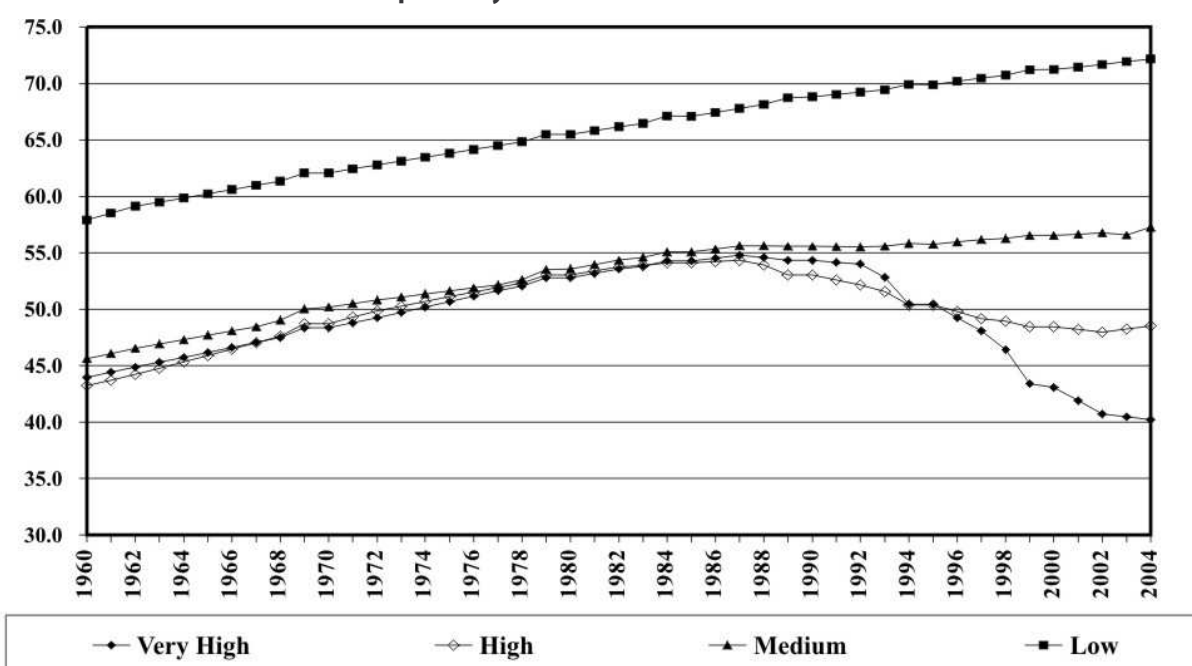
The United Nations estimates that there were 4.1 million new HIV infections in 2005 and 2.8 AIDS-related deaths, resulting in a net increase of 1.3 million people living with the disease (United Nations, 2005a). Ten countries are estimated to have HIV/AIDS infection rates of more than 10 percent in the 15-49 age group, seventeen have infection rates of greater than five percent, and 56 countries have infection rates higher than one percent (World Development Indicators, 2006). More worrisome, between 2003 and 2005, the infection rate in 82 countries showed an upward trajectory, while only 36 countries recorded a downward trajectory in infection rates.

As a disease with potentially high mortality rates, HIV/AIDS has already seriously compromised human development outcomes for countries with high rates of infection. As Figure 1 indicates, countries with the highest rate of infection (greater than ten percent of the 15-49 age group) have experienced an average loss of fifteen years of life expectancy since 1987, and approximately twenty years compared to the levels that would have been attained had past trends continued. Even countries with medium rates of infection (between one and five percent) have seen compromised human development outcomes (relating to life expectancy). Though average life expectancy has not fallen, its rate of growth has flattened out considerably in these countries since 1987 (especially when compared to countries with low infection rates). If pre-1987 patterns had continued, these countries would have achieved life expectancy levels approximately four years higher than was actually achieved in 2004.

HIV/AIDS and poverty are closely interlinked in a dual causality matrix. The poor are more vulnerable to HIV/AIDS in the same way that they are more vulnerable to most infectious diseases. This is because several factors that increase vulnerability (such as poor nutrition, poor education, poor health status and limited access to health services) are also coincident with poverty (UNDP 2003). But HIV/AIDS itself is likely to generate poverty and further entrench existing poverty. If untreated, the disease invariably leads to premature mortality, preceded by an average of eighteen months of severe morbidity during which high medical costs are typically incurred (Parker, 2003). The loss of household income due to

morbidity and death, the cost of treatment (even when full-blown AIDS is avoided), and the withdrawal of caregivers from the labor force can drive a formerly non-poor household below the poverty line. Booysen (2004) showed that, for a sample of South African households, HIV/AIDS was not only more likely to affect poor households, but also non-poor households affected by the disease demonstrated a greater likelihood of downward economic mobility while poor households affected by the disease showed reduced upward mobility.

FIGURE 1

HIV Infections Rates and Life Expectancy

Source: World Development Indicators (Online Version) 2006 (The World Bank).

TABLE 1

HIV Infection Rates and the Poverty Headcount Ratios

Incidence Level (% of 15-45 age group)	Average Poverty Headcount Ratios (Using a \$1 a day poverty line)		Percentage Change (in Recorded Rates)
	1985-1994	1995-2004	
Very High (10 percent or greater)	34.6	40.9	18.21
High (5-10 percent)	28.5	31.0	8.77
Medium (1-5 percent)	21.0	23.3	10.95
Low (Less than 1 percent)	12.3	10.1	-17.89
World Average (unweighted)	15.9	15.2	-4.40
Sub-Saharan Africa Average (unweighted)	44.6	44.0	-1.35

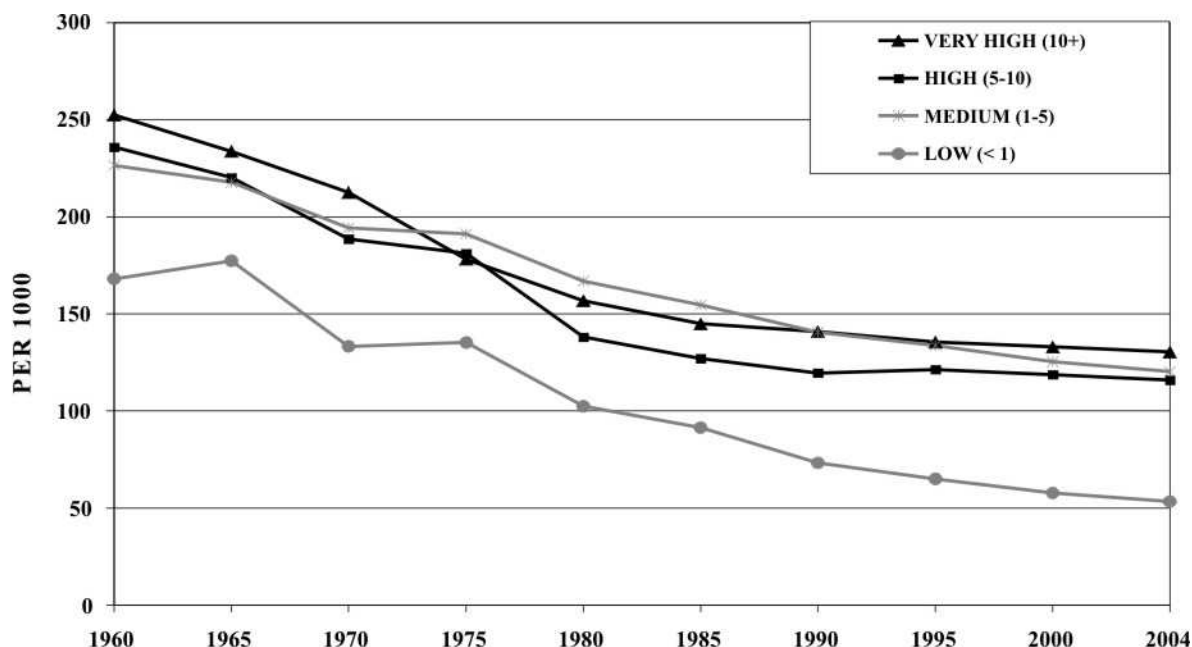
Data Source: World Development Indicators (Online Version) 2006 (World Bank).

Note: The poverty measures are the lowest recorded for each of the ten-year periods and the average (poverty headcount ratio) for most groups is for the subset of countries for which data were available.

The challenge of halving extreme poverty by 2015 is therefore made more daunting where infection rates are significant. In fact, countries with high or medium infection rates experienced *increased* poverty in recent years. Table 1 indicates that, from the 1985-94 period to the 1995-04 period, the (unweighted) average poverty headcount ratios for countries with HIV/AIDS infection rates of one percent or greater *increased*. That ratio was falling only for countries with infection rates below one percent. Though this evidence does not suffice as proof that HIV/AIDS is the cause of increased poverty, that likelihood is bolstered by the fact that this result cannot be attributed to the generally poor performance of sub-Saharan Africa (where all the very high prevalence countries are located). For the periods under consideration, the (unweighted) average poverty rate in sub-Saharan Africa did not rise but, instead, fell slightly.¹

Lowering child mortality by two-thirds is another Millennium Development Goal that this pandemic makes more challenging. The disease increases the risk to children through several avenues. Without medical intervention, mother-to-child transmission is likely. Orphaned children or children of sick parents are also less likely to make it to their fifth birthday. The stresses of having a person living with HIV/AIDS in a family, even when mothers are healthy, can also reduce the care that children receive (UNDP, 2003). The effect of that amplified challenge is already obvious in current outcomes. As Figure 2 shows, for countries with high HIV/AIDS infection rates, the previously steep downward path of child mortality rates have essentially come to a halt since 1990. By comparison, countries with low prevalence rates (and, to a lesser extent, countries with medium rates) have continued to lower child mortality rates into the 21st century.

FIGURE 2

HIV Infection Rates and Child Mortality

Data Source: World Development Indicators (Online Version) 2006 (The World Bank).

Note: Child mortality refers to the mortality of persons under five years old.

There is, as yet, little evidence, at the macro level, that HIV/AIDS is compromising broad education achievements in high and medium-prevalence countries (Table 2), but there are many reasons to believe that the disease hinders progress at the micro level and will thus make further progress difficult over the long-term. Families coping with the disease are more likely to remove children from school because of their inability to meet education costs. Education may also be compromised by the need for additional income (from child labor) or the need for older children to become caregivers (to sick parents) or the loss of household heads when parents are deceased (UNDP, 2004). Additionally, the loss of human capital (teachers and administrators) has a qualitative effect on the education provided, which will not show up in enrolment data but is likely to have an effect on future productivity.

Because the disease strikes at workers in their most productive years, the productive capacity of the economy is likely to be compromised across all sectors. The presence of large numbers of unemployed and underemployed in the economy means that the immediate labor constraint that the exceptionally high death rates (among the active adult population) could have implied may be delayed. This is suggested by the figures in Table 3, which show that despite the fact that high and very high prevalence countries have been dealing with high death rates among the active adult population for at least twenty years, they were able to keep pace with low and moderate prevalence countries (in terms of growth) until the turn of the century. Since then, however, they appear to be falling behind in terms of average growth.

TABLE 2

HIV Infection Rates and School Enrolment

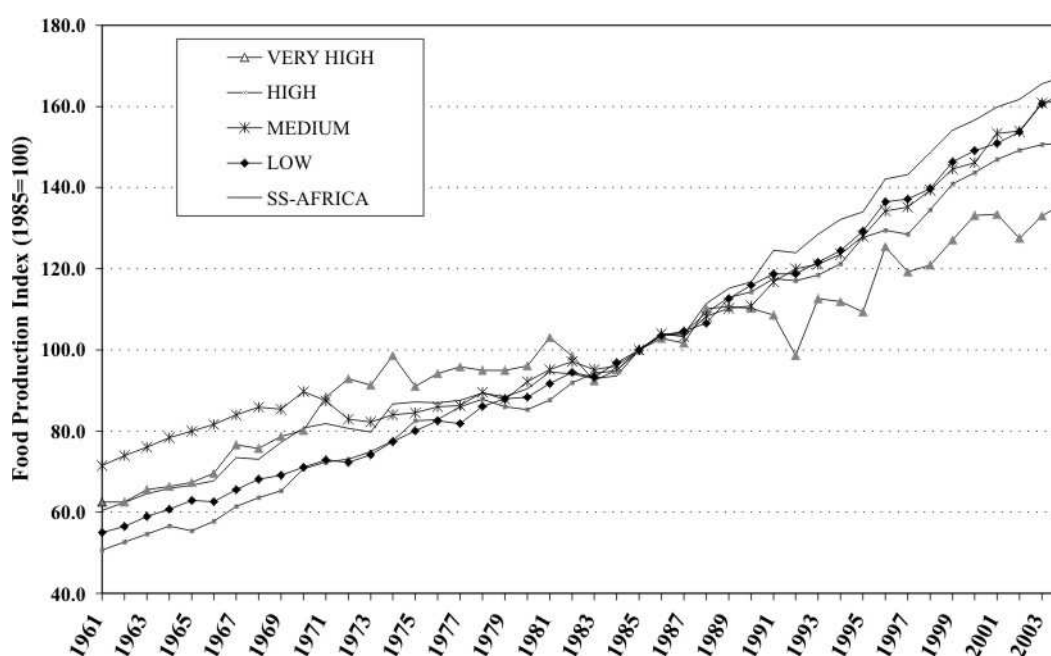
Incidence Level (% of 15-45 age group)	Primary School Enrolment Rates		
	1990/91	1999/2000	2003/04
Very High (10 percent or greater)	73.9	74.8	81.7
High (5-10 percent)	63.5	55.9	75.1
Medium (1-5 percent)	63.1	67.3	74.3
Low (Less than 1 percent)	83.3	86.0	88.7
Mean	75.3	79.3	83.9

Data Source: World Development Indicators (Online Version) 2006 (The World Bank).

Given the typically large numbers of unemployed and underemployed in these economies, it is understandable that it would take some time for these countries to come up against labor resource constraints. However, skilled labor is not plentiful in these countries and the persistent loss of skilled labor would (in all likelihood) have eventually overwhelmed replacement capacity. The productivity of both existing skilled and unskilled labor is also likely to have been increasingly compromised by the high morbidity rates resulting from increasing numbers of full blown AIDS cases. Moreover, the presence of unemployment and underemployment does not necessarily imply that lost labor can be replaced in short order. Some labor is specific to certain factors of production (notably land) in a way that reduces mobility. For example, farmers and self-employed persons may not be easily replaceable if they become ill or die. The business may not be transferred and, even if transferred, may witness significant productivity losses. For this group, the effect of morbidity as well as the loss of labor because of the need for care-giving are particularly exaggerated.²

Not only is this likely to have an effect on overall output growth; in the area of food production it can also have a direct effect on human development outcomes. In economies where food production for home consumption is critical to meeting minimum dietary needs, reduced food production can mean lower nutrition outcomes generally, and for children in particular. Poor nutrition outcomes, besides the direct implication of increased hunger, can have negative repercussions for other human development outcomes in the areas of health and education. The trajectory of growth in food production still remains positive for countries with high and very high infection rates, as Figure 3 indicates, but this trajectory is demonstrably flatter than it is for countries with lower infection rates. Given their growing populations, these countries may be close to or already experiencing falling per capita food production levels.³

FIGURE 3

HIV Infection Rates and Food Production

Data Source: World Development Indicators (Online Version) 2006 (The World Bank).

The effects described above are likely to be extended and deepened over time as social capital (in the form of relations of trust, such as within the family, community level institutions and social networks), which is needed to mitigate the effects of the pandemic, is itself undermined by the disease. In addition to the effects of morbidity, death and the loss of livelihood, the stress, fear and distrust related to high HIV/AIDS prevalence rates lead to the breakdown of family units (Drinkwater, 2005). Beyond any immediate effects, the inter-generational transfer of skills and knowledge is interrupted (Misselhorn, 2005). Community institutions and networks, in turn, are undermined by the disintegration of sexual and social norms, the increased mobility of individuals and families, and the forced changes in the economic and social roles of individuals (Bryceson and Fonseca, 2006; Drinkwater 2003, 2005; Misselhorn, 2005).

Besides its effects on human development in general (and MDGs in particular) through the various channels discussed above, HIV/AIDS is likely to further compromise the potential

for human development advancement by slowing down economic growth. The effect on growth can occur through various mechanisms. The morbidity and medical costs related to HIV/AIDS are likely to reduce both household and business savings (Quattek, 2000). Lower productivity from the loss of human capital will lower output. It will also do so indirectly by discouraging foreign (as well as domestic private) investment, even as public investment is constrained by the need for increased health sector spending (Anand *et al*, 1999; Haacker, 2002). These effects may be further compounded, and exacerbated over time, by lower growth in human capital (as the high mortality rates reduce school attendance and teacher availability) and lower human capital investment (due to the disincentive effect of mortality on individuals and firms) (Arndt, 2006; Arndt and Lewis, 2000).

In addition, the breakdown of economic and social institutions may undermine productivity capacity (Misselhorn, 2005; Bryceson and Fonseca, 2006). For high-prevalence countries, the impact is estimated to be substantial. For example, Arndt (2006) estimates a 4.3 percentage point loss of GDP growth for Mozambique (from the effects of HIV/AIDS) by 2010 and McDonald and Roberts (2006) estimate that, in Africa, each percentage point increase in infection rates has cost the equivalent of a 0.6 percent loss of potential 1998 per capita income.⁴ Even for low-incidence countries, the output costs are not trivial. Anand *et al* (1999) estimated that the average annual cost of HIV/AIDS in India, over the 1986-95 period, may have been as much as one percent of GDP.

In much of the discussion regarding appropriate strategies for achieving the MDGs, growth is seen as a critical intermediary.⁵ Yet, as the previous discussion makes clear, HIV/AIDS threatens human developments not only directly but also indirectly through the growth process. It threatens growth not only by reducing productivity and productive capacity and undermining the process of capital accumulation and technology transfer, but also through its effects on human development itself. The effects of HIV/AIDS on health, nutrition and human and social capital accumulation – attributes of human development – all have potential growth implications. Clearly, as suggested by Sen (1999) and demonstrated by Ranis, Stewart and Ramirez (2000), and Boozer *et al* (2003), there is bi-directional causation here, and HIV/AIDS threatens to intervene in that process in a way that leads from a virtuous cycle to a vicious one. Indeed, there is some evidence that this deterioration may already be imminent in several high prevalence countries. Table 3 suggests that while high prevalence countries were able to maintain comparable rates of economic growth with other countries until 1999, since then, their average rate of growth has fallen behind those of countries with lower rates of infection.

TABLE 3

HIV/AIDS Prevalence Rates and Growth

Incidence Level (% of 15-45 age group)	GDP Growth Rates				
	1980-84	1985-89	1990-94	1995-99	2000-04
Very High (10 percent or greater)	2.4	4.6	2.5	4.0	2.7
High (5-10 percent)	5.1	1.9	1.7	3.9	3.3
Medium (1-5 percent)	1.6	2.7	0.6	3.6	4.9
Low (Less than 1 percent)	2.6	3.1	0.7	3.9	4.6
Average	2.4	3.0	0.9	3.8	4.4

Data Source: United Nations Common Database (UNCDB) 2006.

3 OFFICIAL DEVELOPMENT ASSISTANCE (ODA) AND HIV/AIDS

In line with the global nature of the epidemic and its prominence as part of a Millennium Development Goal (MDG), there has been a global dimension to the actions taken to halt the spread and address the costs of HIV/AIDS. That includes the funding for research on possible vaccines and the superstructure of international institutions involved in monitoring, advocacy and resource mobilization. However, action at the local level in the areas of prevention, treatment and management of the social and economic costs of the disease remains the primary and most critical avenue for confronting the disease. Given the fact that all of the countries with high and/or rapidly rising rates of HIV infection (as well as its sister illnesses, malaria and tuberculosis) are developing or transition economies, any scenario that entertains the prospect of intervention on a scale sufficient to stop the disease in its tracks and mitigate the potential negative effects mentioned above must contemplate the transfer of significant new resources to a majority of these countries.

The 2006 Report on the Global AIDS Epidemic (United Nations, 2006b) estimated that the global funding requirement for fighting the disease will be US\$14.9 billion in 2006, US\$18.1 billion in 2007, and US\$22.1 billion by 2008 (US\$55.1 million over these three years). The greater proportion of that funding would be required for prevention programs (at a cost of US\$8.4 billion in 2006 and rising to US\$11.4 in 2008). The required funding for treatment of the disease (including the cost of training and attracting additional medical professionals) was expected to nearly double from US\$3.4 billion in 2006 to US\$6.2 in 2008. The greater part of that increase would be needed to meet a planned target of extending the coverage of anti-retroviral therapy to 75 percent of those infected with HIV by 2008 (United Nations, 2006b).

Local resources in the high-infection countries (in the form of both private and public health spending) are expected to cover approximately 30 percent of the estimated costs, but the remaining 70 percent is expected to come from bilateral, multilateral and private donors in the form of official development assistance. Though (estimated) available funds from all sources (US\$8.3 billion for 2006, \$8.9 billion for 2007 and \$10 billion for 2008) fall well short of requirements, when combined with anticipated flows for other MDG initiatives, many high infection countries face the prospect of rapid and substantial increases in the flow of development assistance.

4 FEARS RELATED TO AID INFLOWS

At face value, the story of increased resource inflows for developing countries would appear to be nothing but good news. The additional resources can be used to:

- Provide badly needed resources for the treatment and prevention of HIV/AIDS (as well as other diseases) and for addressing some of the social consequences of the disease, such as the care of AIDS orphans and the repair and support of challenged or compromised community institutions and household structures;
- Provide for the rapid replacement of human resources lost to the infection and the training of additional personnel to address the urgent issues of prevention, treatment and mitigation;
- Make progress towards the achievement of other MDGs; and

- Provide relief from savings and foreign exchange constraints - thus allowing for more optimal (and ultimately more growth-enhancing) decision making with respect to production and investment-related choices.

Yet, among neither developing-country policy makers nor development specialists is that news received with unanimous approbation. Such reservations are not without merit: large aid receipts and, especially, aid inflows that increase rapidly over relatively short periods of time come with several dangers.

AID DEPENDENCY

Large aid flows that persist over extended periods can induce responses that are inimical to economic growth and welfare over the long run. One of those potential negative responses is a reduced domestic savings rate as domestic economic agents choose to consume the most part of current income, with the expectation that foreign savings, in the form of development assistance, will provide the necessary additional resources for investment. Related to this is the prospect that the taxation effort may diminish while spending becomes less focused. This would thus compromise the potential growth-enhancing effects of public sector activity (Bevan, 2005). The aid windfall can also induce rent-seeking behavior that detracts from productive activity, negative institutional arrangements (focused on the distribution of aid rather than production) that persist long after the high-development-assistance period, and high import-dependent patterns of production and consumption that compel painful adjustment beyond that period (Tornell and Lane, 1999; Bevan, 2005).

In order to escape the effects of dependency, countries facing the prospect of increased aid flows will need to plan and execute the management of these flows in ways that reduce the dangers of dependency. This means a balance between increased consumption and increased investment and continued efforts to improve domestic resource mobilization. Understanding and managing the political economy of aid flows will also be critical to avoiding institutional developments that compromise human development and growth. Additionally, countries will need to develop an exit strategy from aid flows to minimize the welfare and other costs of a disorderly descent from the period of high development assistance.

UNSUSTAINABLE DEBT BURDENS

Despite the fact that the non-grant element of most of the official financial assistance received by many high-prevalence countries comes in the form of concessional finance, the very limited capacity of many of these countries to handle even moderate debt service burdens means that, if a significant proportion of development assistance is provided in the form of loans rather than grants, a relatively rapid build-up to unsustainable debt burdens is a real possibility for several countries (Serieux, 2001).

That danger derives from the particular challenge of meeting external debt repayment commitments in the face of limited levels of institutional and economic development. Servicing external debt requires countries to simultaneously overcome both the internal transfer problem (translating part of the economic gains from debt flows into the additional government revenues sufficient for debt repayment) and the external transfer problem (translating debt service payments denominated in domestic currency into debt service

payments denominated in foreign currency without compromising foreign currency availability for needed imports). Yet, the economic and institutional structures of many low income countries, and all least-developed countries, make this challenge particularly daunting. Primary commodity exporters with high export concentrations (a typical profile for moderate and high HIV/AIDS prevalence countries) face highly volatile export income streams that constrain their ability to maintain significant and consistent levels of debt service payments. Agricultural commodity producers who must contend with the vagaries of nature, in addition to price volatility in international commodity markets, are particularly vulnerable.

Countries with weaker institutional and physical infrastructure have more limited ability to mobilize domestic resources and also recover less quickly from economic calamities. All of these factors reduce countries' ability to consistently overcome the transfer problems over extended periods, even when faced with moderate levels of debt service payments. Lastly, small countries, which generally need to borrow proportionally more because of limited domestic economies of scale (from domestic spending), are particularly disadvantaged because debt service payments will also tend to be higher relative to both revenues and exports while their likelihood of export concentration is higher.

Notwithstanding HIPC debt relief, many of the high aid-receiving countries were already showing signs of approaching debt distress by 2004 (IMF, 2005a). The Multilateral Debt Relief Initiative (MRDI) may serve to further delay the arrival of that threshold for some countries, but not indefinitely.⁶ It will be important that donors and recipient countries alike ensure that the loan content of development assistance is consistent with recipient countries' debt carrying capacities – which, it can be argued, may be close to nil for some of the least developed countries.

THE DUTCH DISEASE EFFECT

Dutch disease generally refers to the immiserizing effect of a foreign exchange-related economic windfall on the traded goods sectors of small open economies. The original model, as presented by Corden and Neary (1982), referred to the effect of a natural resource discovery but, since vanWijnbergen's (1986) observation that it could be equally applicable to recipients of large aid inflows, the threat of Dutch disease has been an outstanding concern for aid recipients despite little clear evidence of its presence to this point (an issue to which we will return in Section VI).

Like a natural resource windfall, a high-aid recipient country receives large inflows of foreign currency. A significant part of that aid is spent on nontradable goods, raising their prices (determined domestically) relative to tradable goods prices determined (for small open economies) on the world market.⁷ The result is a real exchange rate appreciation. That appreciation will be demonstrated mostly through a nominal appreciation in the case of a flexible exchange rate regime or a rise in domestic inflation in the case of a fixed exchange rate regime. The real appreciation reduces the competitiveness of the domestic traded goods sectors. Over the long run, production in these sectors contract and resources shift to the production of nontradables. The result is a less diversified and more vulnerable economy that is increasingly dependent on external resource flows. Thus, the short-run welfare benefits of the aid inflows may be superseded by the welfare losses from the increased cost of non-traded goods and the loss of production in the traded goods sector.

Aid-related Dutch disease may portend even higher costs than resource-related Dutch disease. In the case of natural resources, the benefit typically lasts several decades; but aid flows are unlikely to last for such extended periods. Thus, the inevitable reduction in aid flows, the requisite economic downturn and the painful process of the reconstruction of the economy may arrive much sooner. We investigate the theoretical model, several variations on the basic model and the empirical evidence for and against Dutch disease in Section VI and the related exchange rate management issues in Section VII.

VOLATILITY OF AID FLOWS

While Dutch disease (aided, no doubt, by the suggestion of an ailment in the name) is widely seen as the potential curse of high levels of development assistance, the volatility of aid flows, which increases with the size of aid flows (Buliř and Hamann, 2003), is perhaps closer to realizing the attributes of a curse.

Aid flows are volatile for several reasons (and in several ways). In the first instance, the information content of aid commitments (the quantity generally used in recipient countries' budgeting), with respect to actual disbursements, is poor. As Table 4 indicates, development assistance commitments are poor predictors of disbursements. For a group of ten of the highest aid recipient (for the 1970-2005 period), commitments were, on average, significantly larger than disbursements and, more importantly, that difference was not very predictable (as indicated by the generally large coefficients of variation for that difference).⁸

Secondly, even aid disbursements themselves are more volatile than fiscal revenues. For eight of the ten countries examined in Table 4, disbursed aid was significantly more volatile than revenues (volatility ratios greater than one) and the volatility ratio was generally higher in the 1990s than it was for the overall period examined (1970-1999). Thirdly, aid is generally pro-cyclical relative to revenue – meaning that it tends to exacerbate the variability in revenue streams. This is confirmed (for this group of countries) by the uniformly positive correlation coefficient between aid and revenue in Table 4. Moreover, these results are not unique to this group of countries but reflect the overwhelming conclusion of the empirical literature (see, for example, Buliř and Hamann, 2003; and Arellano *et al*, 2005).

What these volatility results imply is that, in and of itself, a sharp unanticipated change in the amount of aid received by a country that is credit rationed in international capital markets (the case for most high-aid recipients) is, effectively, an exogenous shock that imposes adjustment costs on the economy. As indicated by Pallage and Robe (2001), the welfare costs of the business cycles created by these shocks are particularly high in low-income countries. Further, when the pro-cyclical of aid is added to its own cycle-inducing effects, that cost is further magnified. In cases where a cash budget is used to manage public sector spending, the stop-start-stop effect induced by the volatility of aid further compromises the effectiveness of public sector activity, with concomitant welfare and growth costs (Buliř and Hamann, 2003). In short, high aid-receiving countries face the very real prospect of greater volatility in fiscal outcomes and economic activity and reduced public sector effectiveness. We examine the implication of exchange rate volatility for exchange rate management in Section VI.

TABLE 4

Attributes of Aid for Ten High-Aid Recipients over the 1970-2005 Period

Country	ODA/GNI Ratio (1970-2005)	Commitments Relative to Disbursements (1970-2005)		Variance of ODA/ Variance of Fiscal Revenue		Correlation Coefficients for ODA and Revenue (1970-2005)
		Ratio of Commitments to Disbursements	Coefficient of Variation of Shortfall in Disbursements	1970-99	1990-99	
Burundi	17.4	1.15	2.82	4.88	14.19	0.38
Gambia	20.2	1.31	2.54	3.08	4.59	0.53
Guyana	14.5	1.52	2.08	0.80	4.59	0.72
Malawi	19.0	1.27	1.63	2.33	0.45	0.49
Mali	16.2	1.20	1.58	1.88	1.03	0.73
Mauritania	22.9	1.11	4.60	4.11	2.90	0.57
Rwanda	18.3	1.14	2.14	1.89	6.70	0.45
Sierra Leone	14.3	1.29	7.52	1.00	8.07	0.69
Tanzania	13.7	1.20	1.89	0.39	0.97	0.54
Zambia	15.0	1.15	4.71	3.54	55.13	0.41
Average	17.2	1.24	3.15	2.39	9.86	0.55

Source: World Development Indicators (Online Version) 2006.

5 THE MACROECONOMIC POLICY CONTEXT OF INCREASING AID FLOWS

The behavior of countries, with respect to increased aid flows, has to be considered in the context of the macroeconomic policy framework within which decisions are made. For the majority of these countries, such a framework is sketched out by the country's Poverty Reduction Strategy Paper (PRSP) which, in turn, must remain within the guidelines established by the International Monetary Fund's (IMF) Poverty Reduction and Growth Facilities (PRGF). In fact, many of these countries have ongoing PRGF arrangements with the IMF. These guidelines lead to particular policy preferences that, as we suggest later, may hinder countries' ability to optimally manage large resource inflows.

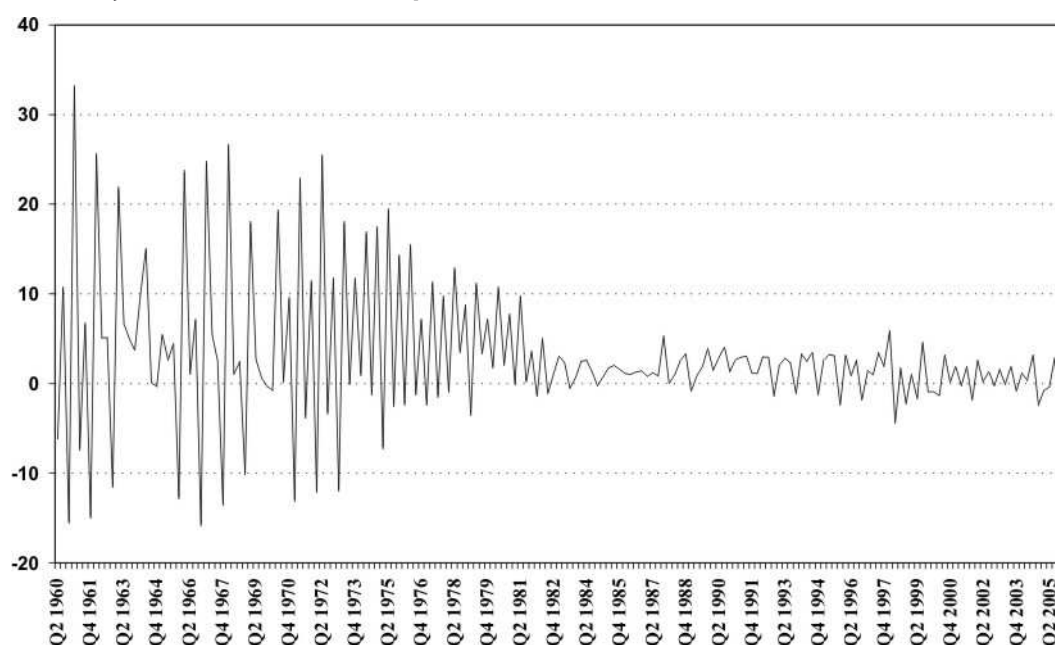
SINGLE-DIGIT INFLATION TARGETS

PRGF programming usually requires countries to maintain single-digit inflation. The argument for this recommendation (often imposed *de jure* by conditionality) is that inflation rates above single digits are very likely to be detrimental to growth (IMF 2005a, 2005c). This assuredness in policy prescription persists despite an admission that "consensus is lacking on the appropriate inflation range for low-income countries" (IMF, 2005a). The empirical support for this recommendation rests on an interpretation of a series of studies that supposedly locate the 'kink' in the inflation-growth relationship – the point at which inflation switches from a positive or neutral to a negative relationship with growth – within the 5-10 percentage range. However, not only do estimates of the "kink" vary widely (from 3 to 40 percent), but also none of the referenced studies differentiated countries by level of institutional development, economic structure or income level.

While this is acknowledged by the International Monetary Fund (IMF, 2005a), with its further admission that “identifying the growth effect of moving from inflation rates of 20 percent to 10 percent has been challenging”, it nevertheless persists in its choice of a single digit inflation target for PRGF countries. In fact, one study which was not quoted (Sepehri and Moshiri, 2004), but which did differentiate countries by income group, located the ‘kink’ somewhere between 11 and 15 percent for low-income countries, 15-21 percent for lower-middle income countries and 4-5 percent for upper-middle income countries.⁹ Based on this evidence, it would seem that the single-digit-inflation rule is not justified and is rather excessive for all countries except the upper-middle income countries – paradoxically, a developing country group is unlikely to be subject to the strict conditionality of PRGF programs.

It should also be noted that the widely pronounced justification for the PRGF emphasis on macroeconomic stability (of which price stability is a critical component) is the experience of the successful Asian economies (particularly the Republic of Korea and Taiwan) in previous decades. However, this approach fails to recognize that macroeconomic stability was the result of an evolution rather than an obligatory framework (Tae, 1972). As Figure 4 indicates, in the early 1960s, when Korea’s miracle growth performance had just gotten underway, quarterly inflation rates were both high and volatile. The low and stable inflation rates that are being demanded of countries at much lower levels of institutional and economic development were not achieved until the 1980s - during the maturing stages of that extended high growth experience. In effect, low income countries, with admittedly fragile economies and immature economic institutions, are being asked to achieve something that fast growing and ‘well managed’ Korea was not able to achieve until its economic institutions had matured significantly.

FIGURE 4

Quarterly Inflation Rates in the Republic of Korea

Data Source: International Financial Statistics (Online Version) 2006 (International Monetary Fund).

With respect to countries’ ability to exercise discretion in the management of aid flows and other economic changes, ‘low-inflation’ conditionality is not a small matter. Excessively low inflation targets compromise countries’ abilities to accommodate exogenous shocks

(including aid volatility). In developing countries (facing downward nominal rigidities in prices), the first-round effect of these shocks is best accommodated by allowing upward price shifts. Inflation targets that fail to accommodate this first-round effect tend to amplify the overall output effect of these shocks – by essentially forcing output to become the transmission mechanism. This reality is fully acknowledged by the International Monetary Fund (IMF, 2005a, c). Monetary policy that is consistent with such low inflation levels also tends to imply high interest rates, which have negative implications for investment and long-term growth (IMF, 2005a).

A BIAS TOWARDS RESERVE ACCUMULATION

Tight inflation targets, per force, translate into relatively rigid monetary targets (assuming, of course, closed capital accounts or imperfect capital mobility). Given a monetary target, PRGF conditionalities allow the net foreign assets component of the money supply (reserves) to exceed projected targets, but one would prefer that the net domestic asset component of the money supply come in below (rather than above) target (IMF, 2005a). Implicitly, the countries are encouraged to err on the side of excessive reserve accumulation.

The reasoning behind this preference is straightforward. Reserve accumulation implies an overall balance of payments surplus (and a likely current account surplus or small deficit) – which is seen to imply sustainable external balances. By contrast, reserve depletion indicates an overall balance of payments deficit (and, likely, a current account deficit as well) and the potential for external sector disequilibrium. Since achieving sustainable external stability is one of the stated objectives of PRGFs programs, the preference described above favors external sector stability. However, this approach discounts the potential cost of reserve accumulation.

External stability is signaled by sufficient and long-run stable reserves and not necessarily by reserve accumulation. In the context of essentially closed capital accounts (as is the case for most of these countries), once reserves are sufficient to accommodate the volatility in trade and capital flows, additional accumulation can be called into question in cost-benefit terms. Reserve accumulation is, quit simply, the accumulation of claims on foreign entities and, when there are urgent and unmet resource needs within the domestic economy, additional insurance for the external account is a rather thin reed on which to rest the justification for deferring or denying access to these resources.

A DISTASTE FOR LARGE FISCAL DEFICITS

Typically, a fiscal deficit implies that the public sector is borrowing to sustain expenditures above revenues. The typical presumption is that government is engaged in one or more of the following:

- crowding out the private sector in the market for domestic credit;
- accumulating foreign and/or domestic debt that takes it closer to (and often beyond) maximum sustainable debt levels; and
- making excessive use of the seigniorage or inflation tax.

In the view of the IMF (2005 a, c), the first effect is likely to compromise current investment and growth and the second and third effects may compromise long-term growth as well as overall macroeconomic stability. For these reasons, PRGF program conditionalities encourage countries to maintain small fiscal deficits or surpluses. Unfortunately, when development assistance comes in the form of budget support (particularly grant support), large fiscal deficits are merely the means through which that assistance is translated into useful domestic initiatives. However, the perception that large fiscal deficits are to be avoided may persist even when they have become necessary (IMF, 2005b). In effect, the aversion to large deficits may compromise the ability of governments to deliver aid through the budget. We shall return to these and other issues related to recent experiences with large development assistance receipts in the next section.

6 DUTCH DISEASE: THE THEORY, EVIDENCE AND MANAGEMENT EXPERIENCE

THEORETICAL PERSPECTIVES ON DUTCH DISEASE

Using the approach employed by Nkusu (2004), the Dutch disease effect is graphically illustrated within a Salter-Swan framework that limits the economy to two sectors – a tradables sector (T) and nontradables sector (NT). The short- and long-run effects are outlined in Figures 5A and 5B. Partial equilibrium analysis for the traded goods market is illustrated in the upper left-hand quadrant, where the small open economy assumption implies a perfectly elastic demand curve for traded goods (D_T). Partial equilibrium analysis for the nontraded goods market is illustrated in the upper right-hand quadrant. The lower right-hand quadrant presents the production possibility frontier (PPF) and community indifference curves that define the economy's consumption and production choices. The slope of the terms of trade line (between traded and nontraded goods) represents the *real* exchange rate. Initial equilibrium is assumed at point A, where there is a trade balance.¹⁰

The short-run effect of an aid inflow is illustrated in Figure 5A by an initial shift in consumption to point B, which is outside the production possibility frontier. The steeper terms of trade line at B indicates a real exchange rate appreciation caused by a rise in the price of nontradables due to increased demand (D_{NT}), with no similar price effect in the tradables sector. A trade deficit also develops (or any existing one widens).¹¹ Figure 5B indicates the long-run effects. The movement of labor and other resources from the tradable goods sector to the nontradables sector leads to an increased supply of nontradables and a fall in the domestic supply of tradables (shown by the flattening of the supply curve and production possibility frontier as a result of increased factor mobility over the medium to long run). This helps to moderate, but not eliminate, the initial real exchange rate appreciation. The trade deficit also widens because the currency appreciation induces expenditure switching in favor of tradables (imports). Long-run production is therefore at A', which implies a smaller tradables sector, and consumption is at B', still outside the production possibility frontier.

We can use this basic framework to examine the effects of several suggested modifications to the model assumptions. As we will see, these modifications have the potential of reversing or exaggerating the effects described above.

FIGURE 5A

Dutch Disease Effects – The Initial Increase in Aid

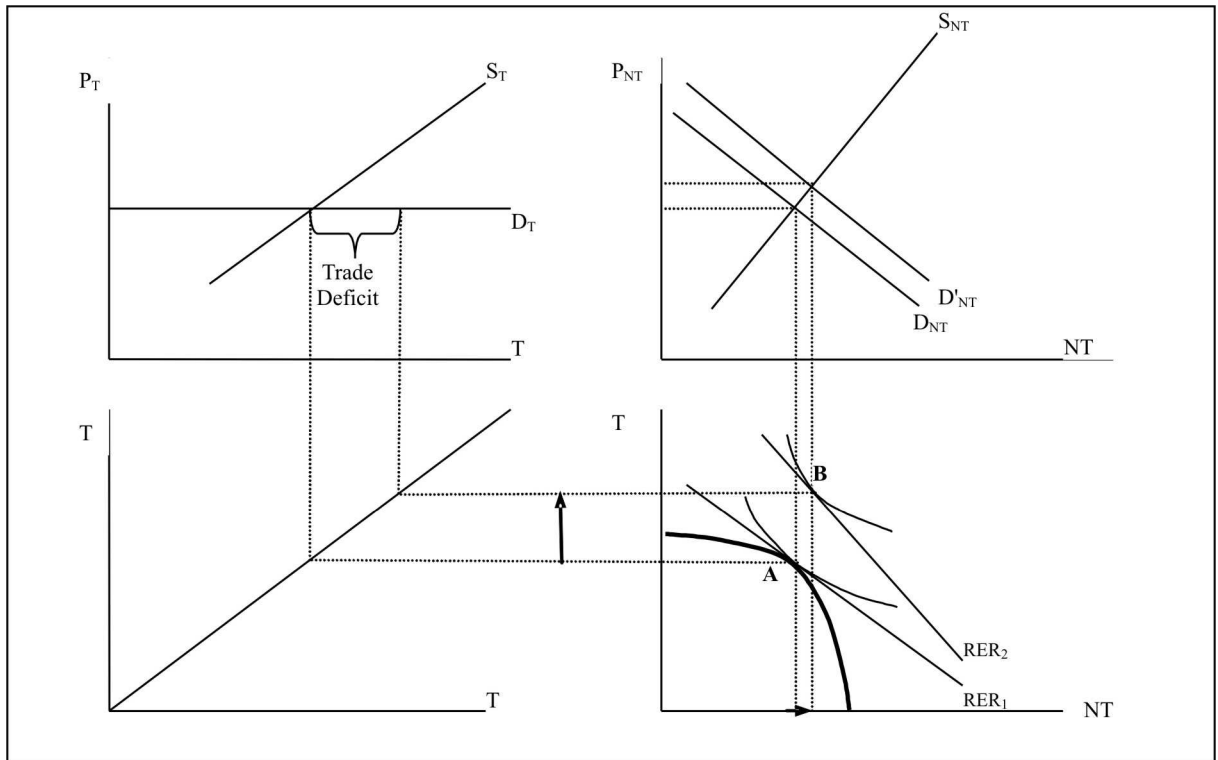
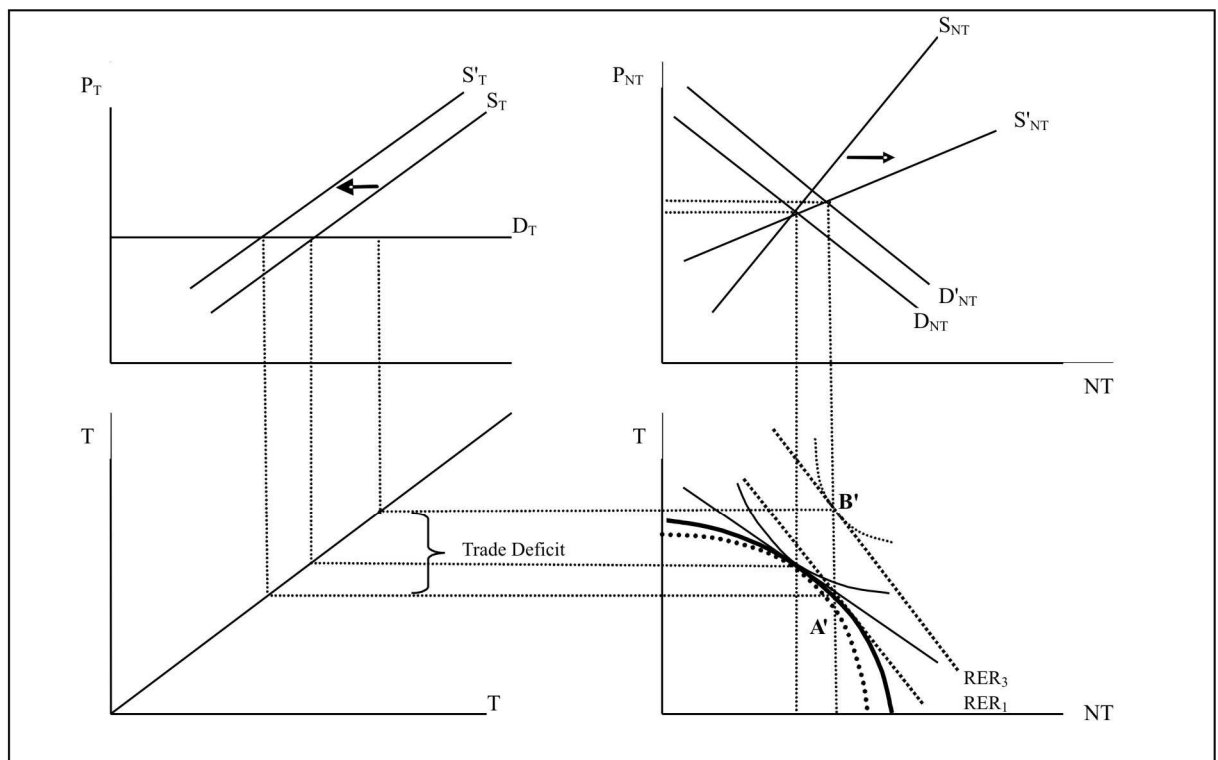


FIGURE 5B

Dutch Disease Effects – Medium to Long-Term

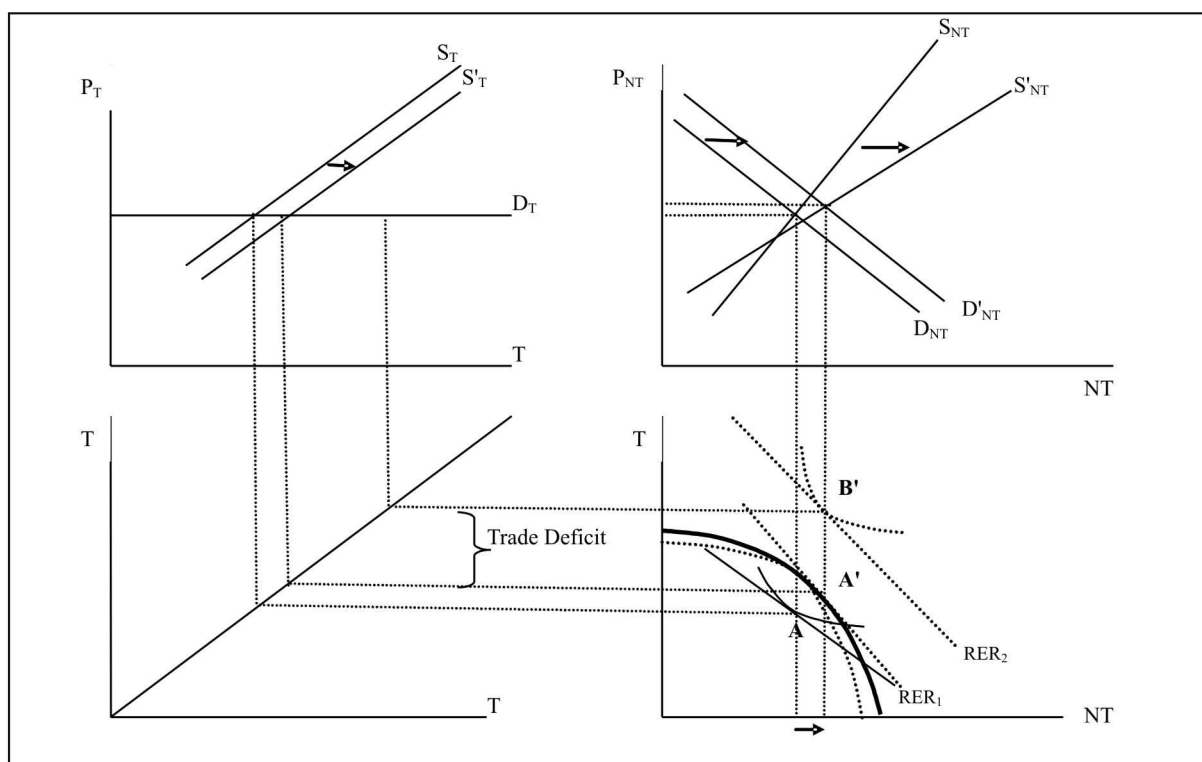


Conditions of Excess Capacity (or Unemployment)

Nkusu (2004) postulates the condition of excess capacity (in terms of both capital and labor) in the economy at the time of the increase in aid inflow (Figure 6). It can be argued that this is a more typical situation for developing economies than the full employment picture presented in Figures 5A and 5B.¹² In the case of unused capacity, the economy is not operating on its PPF (Figure 6). In this case, the initial real exchange rate appreciation is likely to be replicated, but the inflow (and the increased demand and resources it implies) allows the economy to shift production to its PPF. The real exchange rate appreciation will be moderated by a larger output response (than in the basic model) as the use of previously unused capacity restrains input cost increases. The net result may be an actual increase in the production of both traded and nontraded goods. (However, the point of production on the PPF suggests lower production in the traded goods sector than would have been obtained under conditions of full employment before the capital inflows – a mute point if resource underutilization had been persistent).

FIGURE 6

Large Aid Flow with Initial Excess Capacity



At first, it may seem that the assumption of unused capacity (including unemployment) may not be appropriate in light of what has been said about the loss of labor from HIV/AIDS infections, but two points need to be kept in mind in that respect. The first is that even for high prevalence countries, it is unlikely that the constraint that they face will be the availability of unskilled labor. A high level of unemployment and underemployment, before and after the arrival of the HIV/AIDS pandemic, was, and still remains, typical in these countries and there is some flexibility in substituting for unskilled labor in the medium to long term.

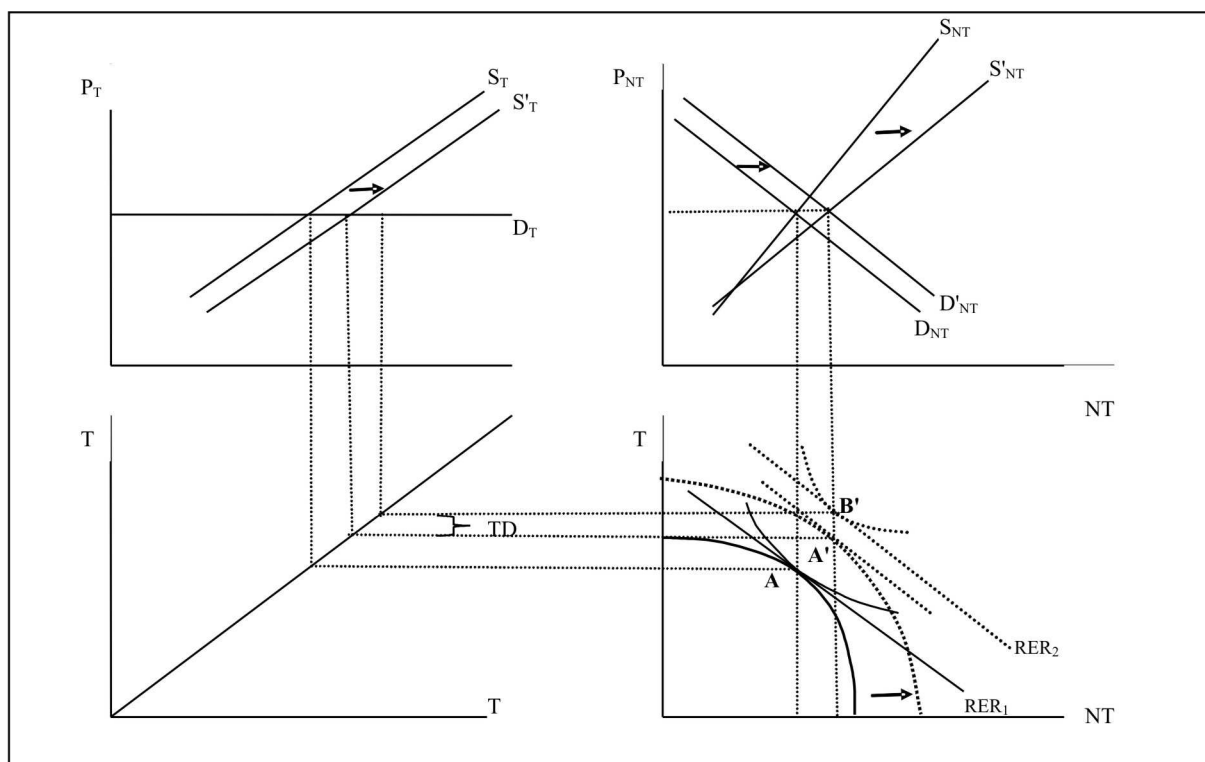
The more likely binding constraint on production would be skilled labor, which is typically a scarce input in these countries. This would be exaggerated by factor specificity (such as farmland that is not easily sold or small enterprises that are tied to owners). Secondly, even for skilled labor, a significant part of the problem may be morbidity levels (high illness rates and absenteeism). The lowered production levels (relative to potential) is most usefully considered unused capacity (rather than a binding constraint caused by contracting the production possibility frontier) because much of that capacity can be recovered relatively quickly through access to better health care (including, but not limited to, anti-retroviral therapies).

An Aid-Induced Productivity Effect in Both Sectors

Adam and Bevan (2006) propose the case where aid inflows are used for government investment in infrastructure that results in (roughly equal) productivity gains in both the tradables and nontradables sectors. This situation is illustrated in Figure 7 where the productivity effect is demonstrated by a symmetrical expansion of the PPF. Again, the initial real exchange rate appreciation and the shift in demand towards nontradable goods in the short run are replicated. However, the increased productivity allows for an output response in the nontradables sector that moderates, and at least partly reverses, the real exchange rate appreciation. This effect, together with the productivity increase in the tradables sector, allows for a net expansion of that sector. Thus, both sectors expand and the long-run trade deficit is smaller than the short-run trade deficit.

FIGURE 7

Large Aid Flows with a Generalized Productivity Effect



An Aid-Induced Productivity Effect in the Nontradable Goods Sector

Adam and Bevan (2004) also examine the prospect of an aid-induced productivity increase in the nontradables sector, but no similar increase in the tradables sector. This scenario is not illustrated by a diagram, but its effects can be deduced in a relatively straightforward manner. In this case, the expansion of the PPF would be skewed towards the nontradable goods sector (with little or no change in the traded goods intercept). Again, the initial real exchange rate appreciation and increasing demand for nontraded goods are identical to the effects in the initial model. However, over the medium to long run, the productivity and price-induced supply response in the nontradables sector produces a complete reversal of the relative price effect. Within a relatively short period (three years according to the simulation results of the Adam and Bevan (2004) model), the exchange rate appreciation is replaced by a net depreciation that induces a net expansion of the tradables sector as well. The recovery and expansion of the tradables sector is even more pronounced than in the case of a sector-neutral productivity effect.

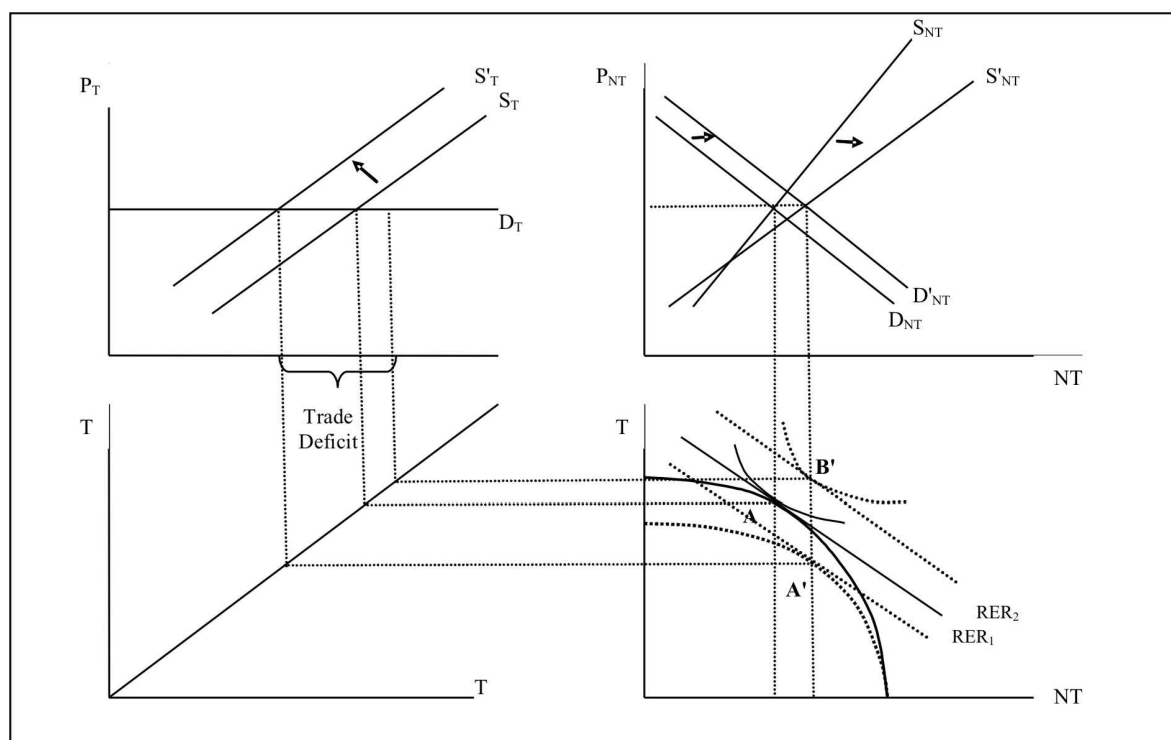
An Aid-Induced Productivity Effect in the Tradable Goods Sector

The situation in which aid-induced public investment results in a productivity increase in the tradables sector, with no similar productivity effect in the nontradables sector, is also explored by Adam and Bevan (2004). This scenario is not illustrated by a diagram but the effects can be readily outlined. The expansion of the PPF, in this case, would be skewed towards the tradable goods sector on the vertical axis (the opposite of that illustrated in the next figure, Figure 8). The short-run experience of an initial real exchange rate appreciation and increasing demand for nontraded goods is yet again reproduced. Over the medium to long run, the absence of a productivity response in the nontradables sector means that the real exchange rate remains appreciated, even over the long run. However, the productivity effect in the tradables sector allows it to regain competitiveness, despite the appreciated exchange rate. Over the long run that sector not only recovers but also expands beyond its initial size.

The Presence of Learning-by-Doing Externalities in the Tradable Goods Sector

The possible effects of aid on tradables, when a (symmetric) learning-by-doing externality exists in that sector, has been explored by vanWijnbergen (1986) and several others. In our static equilibrium framework, this can be best represented by a contraction in the PPF (down the vertical axis) as an outcome of the initial shift in production away from the tradables sector (Figure 8). In this case, the initial exchange rate appreciation results in a shift in production in favor of nontradables. The presence of a learning-by-doing externality means that the fall in production leads to a productivity loss (hence the contraction of the PPF), thus making the sector even less competitive. The net effect is an exaggerated immiserization of that sector over the long run. In this case, the Dutch disease effect is both exaggerated and accelerated. The long-run trade deficit is also larger than it is in the standard framework.

FIGURE 8

Large Aid Flows with Learning-by-doing Externalities**Official Development Assistance for HIV/AIDS and Supply Effects**

Based on the above analysis, one can identify three attributes of high HIV/AIDS prevalence countries that would induce short or long-run supply effects sufficient to eliminate or significantly reduce the likelihood of Dutch disease effects.

- i. Virtually all of the economies with significant levels of HIV/AIDS prevalence start with some level of unused capacity that can be utilized, through the appropriate use of aid resources, to induce a short-run supply response to increased demand in the nontraded goods sector, with very little associated price or wage effect.
- ii. HIV/AIDS already appears to be constraining growth in high prevalence countries. As has already been mentioned, this is likely to be occurring, not from shortages of labor *per se*, but from skilled labor constraints, morbidity and limited factor mobility. Interventions (such as expanded access to antiretroviral therapies) that can immediately increase the availability and productivity of existing labor and human capital will have an immediate supply effect in both the nontraded and traded goods sector. This will further dampen both the relative price shift and the input price effects that are part of the Dutch disease story.
- iii. Aid directed at mitigating HIV/AIDS effects, as well as other MDG-related initiatives, enhance human as well as institutional development. Both of these factors have real productivity implications for both the tradable and nontradable goods sectors. Further, if, as has been suggested, growth rates have been slowed by the HIV/AIDS pandemic (despite remaining positive), even restoration of growth to its potential level constitutes a net productivity gain. As indicated above, the presence of such a productivity effect virtually eliminates the potential for Dutch disease over the medium to long run.

THE EMPIRICAL EVIDENCE FOR A DUTCH DISEASE EFFECT OF AID

Given the fact that the possible link between aid and Dutch disease has received a significant amount of attention in the theoretical literature, the empirical literature on the relationship between aid and Dutch disease is remarkably sparse. One possible reason for this shortcoming may be the fact that the Dutch disease effect of aid is seen as one of many potential negative effects of aid on growth. Thus, the broader question (namely, whether aid has a positive effect on growth, which, from the perspective of many observers, is the more important one) has dominated the empirical literature. However, a Dutch disease effect may not necessarily imply poor growth performance (particularly in the short run) and a good growth performance under an aid regime may not necessarily imply the absence of Dutch disease effects.

In perhaps the earliest multicountry study of the aid-Dutch disease link, Elbadwi (1999) examined the relationship between aid, real exchange rates and non-traditional exports for a sample of sixty-two countries. He found that a 35 percent increase in aid levels was associated with a real exchange rate appreciation of three percent. However, exchange rate overvaluation was associated with an increase in non-traditional exports, rather than the contraction predicted by the Dutch disease model. This also implied a positive relationship between aid and non-traditional exports. However, that relationship was found to be non-linear. The initial positive relationship eventually becomes negative as aid increases – exhibiting a Laffer curve effect. The implication is that aid has a positive effect on the production of tradable goods, but that effect eventually evaporates at very high levels of aid and a Dutch disease type effect takes over.

Sekkat and Varoudakis (2000) examined one aspect of the Dutch disease story for 33 sub-Saharan African countries – i.e., the relationship between exchange rate overvaluation and manufacturing exports. They found a negative relationship between exchange rate overvaluation and manufacturing exports. However, in the absence of a corresponding link between aid and overvaluation, this does not rise up to a verification of the Dutch disease story.

Rajan and Subramanian (2005) take both the direct and indirect paths in investigating the empirical evidence for aid-related Dutch disease. They examined the relationship between the level of aid receipts (relative to income) and the performance of exporting sectors versus sectors producing non-exportables. They found that, in high aid-receiving countries, the exportable-producing (tradable) sectors grew significantly more slowly than the sectors producing non-exportables (nontradables). The authors argue that the Dutch disease explanation for that effect is confirmed by the finding of a positive relationship between aid and exchange rate overvaluation and between the retarded growth of export-producing sectors (relative to non-export-producing sectors) in the face of exchange rate overvaluations. However, in light of earlier analysis, this is not sufficient to confirm Dutch disease effects. The observed effects (aid increase, exchange rate appreciation and lower relative growth of tradables sectors) are also consistent with the condition where there is, initially, an underutilization of capacity (Figure 6). Verification of Dutch disease would have to be demonstrated either by an actual contraction of the export-producing sectors or sustained and substantially slower growth sufficient to produce a considerable imbalance in the economy over the long run.

While the multicountry empirical studies seem to be weakly supportive of the aid-related Dutch disease proposition, the examination of single-country experiences produces quite a different picture. More particularly, Nioni (1998) found that for Tanzania, high aid levels (relative to GDP) were associated with a depreciating real exchange rate, accelerated export growth and a positive growth record. Nkusu (2004) indicates that Botswana experienced a depreciating exchange rate and a stellar growth rate during the period when it ostensibly received a windfall from its rapidly expanding (diamond) mining industry. Though Botswana would appear to have been a classic case study for the typical (resource-related) Dutch disease effect, it should be pointed out that between 1960 and 1980, the very period when mining operations were expanding, Botswana received, yearly, aid equivalent to an average of fifteen percent of its GDP. Thus, Botswana would appear to be a test case for the *combined* Dutch disease effects, but none appears to be present. As Nkusu (2004) points out, the possible countervailing effects of expansion of unused capacity and productivity must be considered in this case. A similar story may have been at work in Tanzania.

MANAGING AID SURGES: SOME COUNTRY EXPERIENCES

As was mentioned earlier, despite the absence of compelling evidence of Dutch disease,¹³ the fear of Dutch disease has been a major concern for policymakers and researchers alike when countries move from low to high or medium aid receipts. The desire to avoid currency appreciation often seems to override the need to ensure that aid is used effectively for its intended purpose.

Such an approach is described in Younger (1992), who examines the increase in aid receipts in Ghana (from very low to moderate levels) in the latter half of the 1980s. According to Younger (1992), with respect to external sector policies, the Ghanaian governments engaged in sustained devaluations of the (fixed) nominal exchange rates and accumulated reserves. Domestic sector policy consisted of expanded government deficits to accommodate the increase in aid combined with strict monetary policy in an attempt to sterilize the effect of accumulating reserves. The result was a slight depreciation, rather than appreciation, of the real effective exchange rate. Ostensibly, Ghana had avoided any Dutch disease effects. The cost, however, was both high inflation and high interest rates.

While Younger (1992) did not find fault with this approach, he did propose that government should shift its division of spending of aid inflows from 80 percent direct spending and 20 percent transferred to the private sector (via debt repurchases and bank deposits) to, roughly, 40 percent spending and 60 percent transfer to the private sector. As IMF (2005b) points out, this approach would amount to compounding a refusal to use the aid to access international goods and services (absorption) with a refusal to spend it for the intended objectives (via increased government spending on public projects or programs). This would essentially be a repudiation of the assistance.

Atingi-Ego (2005) recounts a similar experience for Uganda for the period 1998 to 2000. During that period, official development assistance to Uganda, mostly in the form of budget support, essentially doubled. Here, again, a major preoccupation was avoiding an exchange rate appreciation. The result was continuous reserve accumulation to prevent an appreciation of the nominal exchange rate and sale of government treasury bills to sterilize the effect of reserve accumulation on the money supply (and thus meet low inflation targets). The real effective exchange rate, in fact, depreciated through most of that period but, predictably, the

result was high real and nominal interest rates. Besides the predictable domestic effect of these high interest rates, Uganda had to cope with a significant net private capital inflow in 2003 as the high domestic interest rates (and an only slowly depreciating currency) led to foreign purchases of Ugandan Treasury Bills. This, of course, only made matters worse and suggests that this approach to handling aid inflows can be self-defeating if the capital account is even partially open.

The Ugandan experience is one of five similar episodes reviewed by IMF (2005b) for the same period (1998-2003). This paper argues, quite convincingly, that the optimal approach to aid (in the form of budgetary support) is to allow a current account deficit equal to the size of the aid inflow, and to increase government expenditure by an amount equal to the domestic value of aid inflows. Such an approach should, initially, result in (and, in fact, require) a real appreciation of the currency and additional relative prices shift (that may imply higher inflation). Neither of these effects is expected to be large since both effects will be moderated by the use of foreign exchange to purchase imports and by supply responses in the nontraded goods sectors. Yet, none of the five countries examined (Ethiopia, Ghana, Mozambique, Tanzania and Uganda) quite achieved that ideal and only Mozambique actually tried. Ghana directed all of the aid-related foreign exchange into reserve accumulation and spent very little of it through the government budget;¹⁴ Ethiopia directed most of the aid into reserve accumulation and spent none of it via the government budget; Tanzania directed all of the aid to reserve accumulation, but spent most of its domestic equivalent via the government budget; Uganda (as noted earlier) directed most of the foreign exchange to reserve accumulation but spent most of the domestic equivalent through the government budget; and Mozambique directed only one third of the foreign exchange to reserve accumulation and spent all of the domestic equivalent through the government budget (IMF, 2005b).

The failure to make maximum use of aid appeared to have come largely from fears about real appreciations, inflation, and large fiscal and current account deficits. The fear of real exchange rate appreciation was the dominant factor behind the accumulation of reserves,¹⁵ but the resulting increase in the money supply was consistently sterilized to ensure low inflation levels while government spending was kept down (though, clearly, not as aggressively as the current account deficit) (IMF, 2005b). The resistance to expanded budget deficits was motivated, in part, by fears about inflation but was also motivated by what appeared to be general aversions to large fiscal deficits despite the clear justification for fiscal expansion by the budget support itself (IMF, 2005b). In general, the predominant concerns were assuaged – real exchange rates depreciated or stayed constant, inflation was kept down and government budget deficits were moderate or small – but this was at the cost of very high real domestic interest rates and, most tellingly, a general failure to fully utilize aid for its intended purpose (or, in the case of Ghana and Ethiopia, to use it at all).

AID VOLATILITY – THE BACKGROUND NUISANCE

While much of the concern about the effect of rapid increases or high levels of aid inflows has been the potential Dutch disease effect, an ever present, but less central, feature has been the volatility of aid. Aid, as noted earlier, becomes more volatile as it increases and that volatility can pose major concerns and challenges for recipient countries. Atingi-Ego (2005) noted, in passing, that the increased budget support had meant less predictable budget outcomes with related economic disruptions. For the five countries examined, IMF (2005b) confirmed all of

the volatility-related problems identified by Buliř and Hamann (2003). Aid levels were hard to predict from one year to the next and when two of the countries (Ethiopia and Uganda) experienced exogenous (terms of trade) shocks, the donor response (in terms of sharp increases in aid receipts) was fully one year after the peak of the crisis. While limited flexibility in terms of budgetary spending outcomes, due to PRGF conditionality, meant that aid volatility did not necessarily translate into expenditure volatility, the former was still transmitted into the economy via changes in the domestic funding of budget deficits. The transmission mechanisms were greater interest rate volatility and increased variability in available credit to the private sector (from the alternative tightening and relaxation of bank credit rationing).

7 MANAGING AID INFLOWS: CONSIDERATIONS AND PROPOSALS

THE MANAGEMENT OF AID INFLOWS: AN OPERATIONAL FRAMEWORK

The management of exchange rate inflows can be thought of as the transfer problem in reverse - with the additional requirement that aid is used for its originally intended purpose. This broader challenge can thus be subdivided into three sub-challenges that are, nevertheless, closely interlinked (as will be indicated subsequently).

- i. **Macro-absorption** – the degree to which aid is absorbed into (or transmitted to) the broader macroeconomy. It essentially boils down to the division of aid between reserves and the current account deficit (assuming a current account balance before aid). Full *macro-absorption* means that none of the aid is used to accumulate reserves (except in the very short term) while the use of aid to accumulate reserves means, essentially, no *macro-absorption*.
- ii. **Spending** – the amount that is immediately transmitted through the government budget (or through a designated non-government agency) into actual spending in the domestic economy. Full *spending* requires an increase in the fiscal deficit by an amount equal to the domestic value of incoming development assistance, accomplished either by a net increase in expenditures or a fall in tax revenues.
- iii. **Micro-absorption** – the use of aid for its intended purpose and, more specifically, its productive use (in terms of welfare and productivity effects or both).
- iv. The issues and implications of different actions related to these challenges are articulated in greater detail below.

Macro-absorption

For the receiving country, a disbursement of aid amounts to an entitlement to foreign goods, services or assets. If we assume a closed capital account (which is the case for most large aid recipients), once aid is received, it can either be used to import the additional goods and services to which the country has become entitled (thereby increasing the current account deficit), or the entitlement can be 'saved' for future periods by increasing foreign exchange reserves.

If the country chooses to increase imports, the most immediately relevant issues are the related exchange rate effects, sustainability and the content of imports. In a flexible exchange rate regime, in order to induce the increased demand for imports, the foreign currency equivalent of the entitlement must be sold, thus pushing down the price of foreign currency – a nominal exchange rate appreciation (and real appreciation, or slowdown in depreciation, if inflation remains unchanged). If the exchange rate is fixed, the same result is accomplished by induced inflation from the equivalent increase in the money supply (when aid is initially added to reserves and spent or deposited outside the central bank).¹⁶ This real exchange rate appreciation is, of course, what raises concern about the possibility of Dutch disease. The larger current account deficit does not imply an external sector imbalance since it is funded by an autonomous capital inflow; however, countries may be legitimately concerned about the sustainability of that deficit.

Radical changes in aid disbursements from one year to the next imply rapid expansion and contraction of current account deficits, not unlike terms of trade shocks. This volatility is likely to translate into exaggerated variability in output and investment in the general economy, unless countries have sufficient reserves to maintain foreign exchange availability, and thus smooth imports. This is typically not true of low income countries in general and aid-dependent economies in particular. The content of imports is also important because it indicates the nature of consumption and the potential for aid dependency. Imports of capital goods and non-luxury goods (such as anti-retroviral drugs in the case of HIV/AIDS-related assistance) are an indication that aid is being used for increasing production and/or directly improving welfare. The use of substantial amounts of aid-related foreign exchange to purchase luxury items (or previously locally-produced goods) may be an indication of aid dependency (or Dutch disease effects).

If the recipient country chooses to increase reserve accumulation, this can be thought of as temporary banking of the entitlement. As noted earlier, this can be used to smooth imports (or keep them in line with demand and/or *spending*). However, reserve accumulation also means an addition to the money supply that, *ceteris paribus*, is inflationary. In the absence of an increase in money demand, the monetary authorities may find it necessary to sterilize that addition to the money supply by selling securities on the open market, increasing required reserve ratios or reducing commercial banks' holdings of government deposits.

Spending

If we make the (not wholly unrealistic) assumption that all of the aid is transferred through the public sector (as budget support or public projects), then the degree to which the aid is transmitted to its intended target (without sacrificing other initiatives) depends on how much of that aid the government chooses to spend and what it chooses to do with the aid that it does not spend.¹⁷

If all of the aid is spent directly, there will be a requisite increase in the government budget deficit (relative to pre-aid levels).¹⁸ As with the case of the balance of payments deficit, sustainability is also an issue. Sharp movements in aid flows also imply sharp movements in the government deficit, which can be destabilizing not only for the economy but for government operations as well.

If the government chooses not to spend all of the aid (by increasing the budget deficit by less than the amount of the aid), it has the choice of transferring some of that aid to the private sector (or at least the benefits of that aid) or 'saving' it with the central bank. The transfer to the private sector is achieved via a reduction in net domestic borrowing from the private sector (which includes the retirement of debt, increase in net lending or an increase in government deposits outside the central bank as possibilities). This would amount, essentially, to government 'crowding in' of the private sector. In the right policy and institutional environment, this can mean lower interest rates and higher investment rates, but it also implies an explicit choice of private spending priorities over public sector spending priorities. Justifying such a choice in the face of high Aids prevalence rates and underdeveloped health sectors is likely to be a tall order.

If the government chooses to spend less than the aid received by increasing its deposits at the central bank (with an equivalent retention of reserves), this amounts to setting aside aid for later use. (This may mean that not all aid-related initiatives are implemented, that they are implemented but only partially funded, or that the net increase in *spending* is less than the increase in aid because other *spending* initiatives are cut back). The aid thus set aside obviously has no immediate impact (on either inflation or exchange rates) because it is neither *macro-absorbed* nor *spent*. This strategy (of delaying the use of aid funds) can be used to manage the implementation process by smoothing the *spending* of aid. However, whether donors would be willing to allow such flexibility in the timing of aid *spending* is another matter.

Micro-absorption

As suggested by Bourguignon and Sundberg (2006), *micro-absorption* relates to two aspects of the implementation of aid-financed initiatives.

- a) The degree to which aid reaches its intended target (or at least where it is spent and how it was intended); and
- b) The rate of return acquired per dollar of aid. That rate of return can be measured in terms of welfare impact, growth impact or any measure related to the project objectives.

Achieving the first objective has to do with ensuring that the resources do indeed flow to the required institutions and individuals, and adequate structures and procedures have been put in place to maintain and manage the transfer of resources. In the case of HIV/AIDS-related aid, this will be necessary to ensure that resources are directed in the right amounts, and to the right institutions, for the appropriate interventions (e.g., prevention, care, treatment and human capital development). It is, nevertheless, distinctly possible that aid is properly directed and transferred, but a poor rate of return is achieved.

The rate of return is articulated through two measures - the average rate of return and the marginal rate of return (Bourguignon and Sundberg, 2006). The average rate of return speaks to the existence of the appropriate preconditions for aid. If the arrival is preceded by the development of appropriate infrastructure, institutions and human capital and/or it releases a binding constraint on economic or social activity, the effectiveness (whether measured in economic or welfare terms) is likely to be high.

The marginal return to aid (the conventional concept of aid absorption) refers to the return to each additional dollar of aid (given existing physical and institutional infrastructure). This will, of course, be a decreasing function of aid, but the rate at which it decreases will depend on capacity and flexibility within both the immediate institutional setting and the broader macroeconomy. Clearly, these outcomes are closely related to 1) *spending* decisions because the proper planning, management and channeling of aid flows can have a significant impact on both productivity measures (Walters, 2006); and 2) the degree of *macro-absorption* because ready access to imported goods (or foreign services such as training) may be a critical component of the effective implementation of projects and programs.

AID INFLOWS AND EXCHANGE RATE MANAGEMENT

Targeting Micro-absorption

Official development assistance is most effective when its welfare and/or output benefits are maximized – meaning that it is optimally *micro-absorbed*. Therefore, the primary objective in the management of aid flows must be to ensure optimal *micro-absorption*. If aid is properly targeted, reaches its intended target and is used to advance the planned objectives, the welfare and economic benefits are likely to far outweigh related costs. Thus, the optimal *macro-absorption* and *spending* choices should be those that best serve that ultimate goal. Exchange rate management concerns must therefore be similarly motivated. More precisely, the objectives can be defined as:

- i. Ensuring the best environment for optimal *micro-absorption*; while
- ii. Limiting potential negative consequences to the macro economy (such as dependency, debt distress, Dutch disease, excessive volatility and macroeconomic instability).

Provided that aid is well targeted and disbursed, *micro-absorption* is likely to result in the best average and marginal rates of return over the medium and long run if the aid directed at expanding capacity (through the construction of necessary infrastructure, institution building and related human development) is concentrated at the front end (of increased aid receipts) rather than spread over an extended period. This is because existing capacity (physical, human and institutional) always defines the limits of potential benefits from HIV/AIDS related interventions. The earlier that capacity is enhanced, the greater the recipient country's ability to ensure the largest welfare and productivity effects of aid over the medium term will be.

However, the process of expanding capacity itself can be subject to rate-of-return challenges. In particular, if aid flows are inconsistent, creating delays and start-stop-start effects, both the quality of resulting infrastructure and human capital development and the speed of capacity expansion are likely to be compromised. Hence, the flow of aid needs to be either predictable or sequenced in a manner that allows for maintaining consistent *spending* patterns even in the face of inconsistent disbursement patterns.

These imperatives, with respect to optimal *micro-absorption*, advocate for significant frontloading of aid for the following reasons:

- i. Frontloading allows for the immediate use of aid for urgent prevention, treatment and social interventions to the maximum of existing capacity.
- ii. Over the medium to long term, the ability to use aid productively will be highly dependent on the capacity to distribute and apply aid effectively for prevention, treatment and related objectives (some of that capacity, such as the stock of medical personnel, would itself have been damaged by the disease). If that capacity is not put in place or repaired early on, the marginal returns to aid, once existing capacity has been used up, will fall sharply. Further, the average rate of return will rise only as capacity is increased. Therefore, immediate expansion of capacity for further interventions must also be an initial objective of aid flows.
- iii. Additionally, if aid is sufficiently frontloaded, there may be room for less than full *absorption* and *spending* of aid without significantly compromising immediate objectives. The entitlements thus set aside (assuming a match between partial *absorption* and partial *spending*) can be used to smooth subsequent expenditures on aid-related initiatives – thereby minimizing the macro and microeconomic effect of aid volatility.

One caveat to be kept in mind is that frontloading of aid cannot be an objective in and of itself. Frontloading is optimal if it can, in fact, be used for the objectives outlined above. However, if there are difficulties in using aid itself (such as limited early identification of appropriate projects and programs and a record of corrupt or poor accounting practices), it is appropriate that these challenges be ameliorated before aid is increased to peak levels.

Another related concern is targeting and distribution. If aid is not targeted at areas that are likely to provide immediate benefits in terms of improved health (such as antiretroviral therapies, improvement of basic health facilities and training of health workers), expanded capacity and the repair of social and institutional infrastructure, it is unlikely that the average and marginal rates of return will be high. Related to this is the degree of geographic concentration of resource spending. Aid spending that is geographically concentrated (such as in the major hospitals and cities) is more likely to have large and unwarranted price and wage effects even if it is spent according to plan. The health-care structures of most developing countries suggest that both the greatest need and capacity for rapid improvement and expansion are in small- and medium-size healthcare facilities. An allocation of aid expenditure that is cognizant of that fact is much less likely to come up against resource and distribution bottlenecks that undermine the marginal returns to aid expenditure.

Understandably, frontloading will exacerbate fears of Dutch disease effects because it means a very rapid scaling up of aid. Indeed, if most of that aid is macro-absorbed (as it should be) and spent (as it should be), an initial real exchange rate appreciation is unavoidable. Under flexible exchange rate regimes, most of the adjustment will be in the nominal exchange rate, but there is likely to be some upward movement in domestic prices as well. Under a fixed exchange rate regime, all of the adjustment will be in domestic price changes, implying a more substantial increase in domestic inflation. While this may appear to portend Dutch disease effects, the more appropriate interpretation is that this is the ordinary (and correct) working of the price mechanism. The real exchange rate appreciation is necessary to increase the

demand for imports and (together with some upward domestic price adjustment) signal the increased demand for nontradable goods (and thus an inducement for a supply increase). Whether this will lead to Dutch disease effects depends on the extent of the initial supply response (in the non-traded goods sector) and the medium- to long-run evolution of that response.

These effects depend, in turn, on the prevailing economic conditions and the effect of increased aid-related spending. As was shown earlier, both the presence of underutilized capacity in most developing economies and the immediate productivity effects derived from HIV/AIDS interventions (such as the use of antiretroviral therapies) suggest short-run supply effects sufficient to dampen wage and price responses to aid flows, thus undermining the potential for Dutch disease effects. Over the medium to long run, the general enhancement of human development levels and the repair and improvement of physical, social and institutional infrastructure should further enhance productivity in both the tradable and nontradable goods sectors – making Dutch disease effects even less likely.

A “HIV/AIDS-FOCUSED” APPROACH TO MACROECONOMIC POLICY

As described earlier (in Sections V and VI), the approach that appears to have been taken by most countries thus far is not conducive to optimizing *micro-absorption*. This approach emphasizes the preservation of macroeconomic stability (interpreted as low inflation, small fiscal and current account deficits and stable real and nominal exchange rates), which is seen as a necessary prerequisite for economic growth. As suggested by Moser and Ichida (2001), that growth is seen as critical to continued improvements (or reversal of declines) in human development – particularly in low-income countries. By jeopardizing macroeconomic stability, large aid inflows would seem to put at risk the very attribute that it is (ultimately) aimed at enhancing through HIV/AIDS interventions – human development. From such a perspective, frontloading of aid would make the prospect of large aid inflows doubly unattractive by increasing the magnitude of potential macroeconomic disruption early on. We shall refer to this approach as the ‘stability-focused’ approach because, though its proponents do not argue that the protection and expansion of human development gains is the ultimate objective of increased aid flows, it is presumed that the growth-to-human development channel is a critical causal link that must be protected by a stable macroeconomic environment.

Besides the fact that this approach employs an overly strict interpretation of macroeconomic stability, it is based on a presupposition that is not borne out by the reality of high HIV/AIDS prevalence countries. As indicated in Section II, HIV/AIDS does not simply threaten human development, it also threatens growth directly (as well as through its effects on human development). Therefore, creating the correct environment for growth may amount (metaphorically speaking) to protecting the front of the store while the thieves make away with the goods via the backdoor. A stable macroeconomic environment cannot mitigate the effects of HIV/AIDS on growth. If the pandemic remains unchecked, there is a strong likelihood that it will eventually reconfigure the human development-growth relationship from a virtuous cycle to a vicious one - as compromised growth and improved human development feedback into each other (Boozer et al, 2003).

A more appropriate approach, in the context of substantial increases in aid flows related to the HIV/AIDS pandemic, is one that gives primacy to addressing the pandemic and its effects directly - understanding that the protection and/or restoration of both growth and

human development are desired outcomes of such an approach. Within this framework, a stable macroeconomic environment would be seen as a desired objective *within* the framework of optimal *micro-absorption* rather than the preeminent (and competing) objective of growth-oriented policies. By necessity, this would require a more reactive, rather than proactive, approach to the management of the macroeconomy (as we will shortly describe). A proactive approach means that monetary and fiscal policies are aimed at meeting and sustaining targets for major macroeconomic variables. A reactive approach would allow for movements in macroeconomic variables if they are justified by necessary economic adjustments and reserve the use of monetary, fiscal and exchange rate policies for accelerating overly sluggish adjustment and correcting large and counterproductive movements of these variables. This approach will be referred to as the 'HIV/AIDS focused' approach. A critical difference between the two approaches is the centrality (or lack thereof) of *micro-absorption* concerns.

The 'HIV/AIDS focused' approach takes as a given that full (or substantial) *macro-absorption* and full (or substantial) *spending* of aid will, and should, result in macroeconomic disturbances. In the short-run, given downward nominal price rigidities, prices will rise, real exchange rates will appreciate, and the fiscal and current account deficit will be larger. All of these changes are expected attributes of an economy that is making the necessary adjustments (to the scale-up in aid flows) by sending the correct signals to economic agents. If *micro-absorption* is successful, price effects will be neither excessive nor long-lived, the real exchange effect will be moderated (and even possibly reversed)¹⁹ and the fiscal and current account deficits will have no destabilizing effect on the broader economy.

From the perspective of the 'HIV/AIDS focused' approach, disturbances to the macroeconomy caused by aid inflows should be a legitimate cause for concern only if:

- i. price and real exchange rate adjustments are large and prolonged; and/or
- ii. fiscal and current account deficits exceed those dictated by the value of aid inflows (given pre-existing preferences for these variables before aid flows).

A substantial and extended inflationary effect would suggest that *micro-absorption* has not been successful. This may be due to improper use of aid, institutional or other bottlenecks that are not responsive to price signals or low marginal rates of return (namely, that *micro-absorptive* capacity is exceeded). A real appreciation that is not reversed or moderated over time does not necessarily portend Dutch disease if productivity effects in the tradables sector are sufficient to allow that sector to remain competitive (Adams and Bevan, 2006). However, if the appreciation is large and not moderated over the medium term and if no productivity effect is forthcoming, there may be a case for more careful management of the exchange rate to retain competitiveness over the short run.

Fiscal deficits that exceed the value of increased aid inflow directed at budget support and public sector implemented projects would be equivalent to a fiscal deficit before aid. If such a deficit is large, the usual implications with respect to inflationary financing or the crowding out of the private sector in the market for domestic savings apply. Current account deficits (of the balance of payments) that exceed the value of aid inflows are also equivalent to such deficits before aid. If the deficit is large, it may be unsustainable (i.e., it is not matched by autonomous capital inflows and results in the depletion of reserves). It may also indicate an

excessive reliance on imports that are symptomatic of aid-dependency and/or Dutch disease. If aid-dependency is the problem, than correction will likely require changes in incentives to encourage savings relative to consumption and the consumption of domestic goods relative to imported goods.

MANAGING DUTCH-DISEASE-TYPE EFFECTS OVER THE MEDIUM TERM

As noted previously, an increase in inflation and a real exchange rate appreciation in the short run are not indicators that Dutch disease is imminent or likely. However, if these effects are not moderated in the medium run (or, in the case of the exchange rate appreciation, counterbalanced by productivity increases in the tradable goods sector), that possibility needs to be taken seriously. In this case, a range of policies can be used to moderate these effects and maintain the competitiveness of a country's exported goods over the medium term.

Reducing Macro-Absorption and Spending

Regardless of the exchange rate regime, this policy is likely to be successful because it amounts, essentially, to moderating the flow of aid and thus reducing the potential of Dutch disease effects. However, it also means an essential repudiation of aid beyond a certain level and thus its potential for effectively addressing HIV/AIDS and other human development challenges.

Reducing Macro-Absorption but not Reducing Spending

This may be a favored approach for countries with flexible exchange rates since the reduced *macro-absorption* (reserve accumulation) will reduce pressure on the exchange rate, but the *spending* of aid means that (ostensibly) aid is not repudiated. However, as the experiences of several countries demonstrate, reserve accumulation together with *spending* implies an increase in the money supply and thus inflationary pressures (IMF, 2005b). The typical response has been to sterilize the effect (of reserve accumulation) by a restrictive monetary policy – with resulting high interest rates and credit contractions. This approach has been successful where capital mobility is limited. However, where capital is significantly mobile, or the interest rate effect is strong, that policy may be undermined by increased private capital inflows that negate the reserve accumulation altogether and force even more restrictive monetary policy (Atingi-Ego, 2005).

Reducing Spending but Allowing Micro-Absorption

For countries with fixed exchange rates, the major components of the Dutch disease effects (the real exchange rate appreciation and real wage increase) will operate purely through domestic price increases. In this context, reducing *spending* while limiting reserve accumulation will ease inflationary pressures (by reducing money supply and demand increases). However, as noted earlier, the failure to spend aid while macro-absorbing it amounts to transferring the use of the (foreign) resource entitlement implied by aid to the private sector. In a country facing significant HIV/AIDS and other human development challenges that require urgent public sector intervention, it is difficult to envisage a convincing argument for this approach.

Nominal Exchange Rate Devaluations

In countries with fixed or crawling peg exchange rates, devaluations are likely to succeed in moderating or avoiding a real exchange rate appreciation over the medium term if inflation levels are not extreme. However, devaluations may need to be frequent and this approach solves only half the problem for the traded goods sector since real wage (and other input price) increases may still occur. Moreover, multiple devaluations may serve to raise and/or entrench inflation expectations.

Increasing Import Propensities

By increasing the demand for foreign currency, an increased demand for imports will encourage full *macro-absorption*. This will ease pressure on both the nominal exchange rate and inflation (by accommodating the increased supply of foreign currency and reducing money supply expansion) and thus on the real exchange rate and domestic input costs. This may be a useful policy in the early stages of the scale-up in aid levels when the mobility and availability of domestic resources may be limited. However, beyond necessary imports (such as anti-retroviral drugs and medical equipment), an artificial increase in import preferences may simply serve to engender aid dependency by increasing the import content of consumption and production.²⁰

All of the approaches noted above, in the right context, may succeed in maintaining the competitiveness of tradable goods sectors in countries experiencing a scale-up of aid inflows by moderating price and real exchange rate effects. Indeed, they can legitimately serve to buy time where bottlenecks or sequencing problems occur in the use of aid. However, none of these approaches are optimal long-term approaches because they serve either to submit to failures of *micro-absorption* or undermine *micro-absorption* itself. In either case, they place artificial limits on the effectiveness of aid. Moreover, all of these policies fail to meet the specificity rule – the most efficient form of intervention to achieve a given objective is the one that tackles the problem most directly.

The fundamental argument being made here is that extended or extreme price and exchange rate effects of aid are the result of a failure to properly *micro-absorb* aid. More specifically, in the case of the HIV/AIDS pandemic (and MDG goals), if resources are properly used to increase necessary interventions as well as the capacity for interventions, the supply responses should, over the medium run, overwhelm price responses. In effect, the solutions to making aid maximally effective and avoiding Dutch disease are the same.

Reducing *macro-absorption* and *spending* simultaneously amounts to reducing aid flows and thus essentially refusing further attempts at *micro-absorption*. *Macro-absorbing* aid but not *spending* it also precludes *micro-absorption* but directs the entitlement elsewhere. Similarly, nominal exchange rate devaluations merely choose to accommodate the price effects that are indicators of poor *micro-absorption* rather than addressing the price effect themselves. Increasing import propensities essentially attempts to bypass or minimize *micro-absorption* and thus limit the potential for appropriate supply responses. *Spending* aid with limited *macro-absorption* (that is then corrected by sterilization with resulting high interest rates) undermines *micro-absorption* by limiting price responses and the ability of the private sector to respond to aid-induced investment and output responses.

If the price and exchange rate effects of aid derive, in fact, from a failure to *micro-absorb*, then, as the specificity rule dictates, the problem should be addressed by engaging *micro-absorption* issues directly. The failure to *micro-absorb* may be related to a range of factors (such as distribution of aid, sequencing, resource bottlenecks and institutional weaknesses) but it is only by addressing these factors that maximal aid effectiveness can be assured over the long term.

DEBT AND VOLATILITY CONSIDERATIONS

Problems of excessive debt accumulation are likely to be exacerbated by the frontloading of HIV/AIDS-related assistance though, for concessional debt, it is unlikely to create immediate repayment problems. However, the solution to this challenge lies in the nature of disbursed aid. As long as a substantial amount of aid is given in the form of loans (regardless of conditionality), there is always the very real likelihood that some of these countries (most of which are low-income and many of which are least-developed) will accumulate long-term unsustainable debt burdens because their debt-carrying capacity is limited.

With the increase in aid related to addressing the HIV/AIDS pandemic, volatility in aid flows (both in terms of discordance between commitments and disbursements and year-to-year shifts in disbursements) is likely to be substantial and, based on the evidence, it is this attribute of aid that has had the most consistently negative economic effects (Buliř and Hamann, 2003; Arellano *et al*, 2005). If this volatility is allowed to pass through to project and program spending, it is likely to disrupt both the direct interventions (e.g., prevention and treatment) and the capacity building initiatives as project and program spending is disrupted.²¹

If it is, instead, matched by changes in the domestic borrowing component of the fiscal deficit, it will essentially be transferred to the local economy through interest rate volatility and changes in private credit availability, government would increase its level of borrowing because of the aid shortfall (causing interest rate increases and the rationing of bank credit to the private sector) and government deposits may increase with unanticipated disbursements (causing interest rates to fall as banks attempt to reduce excess liquidity via increased lending to the private sector). It is unlikely that both of these modes of transmission can be avoided if there is volatility in aid flows; however, active management of *macro-absorption* and *spending* can minimize the fraction of volatility that is transmitted.

An ideal solution to the problem of aid volatility would be the provision of something akin to a line of credit (tied to committed aid levels) provided by an institution such as the World Bank or a regional development bank. This would allow countries to exactly match shortfalls and excess disbursements of aid with withdrawals from and repayments to that line of credit. However, this is unlikely to materialize given the proclivity of most of these institutions to use conditionalities tied to factors other than procedural and accounting issues.

A less efficient option, but one which is available to most central banks and fiscal authorities (to the extent that donors are willing to allow the delay of aid *spending* after disbursements), is to *macro-absorb* and *spend* less than 100 percent of aid in the scaling-up phase and use that reserve cushion (and unspent entitlement) to match disbursement shortfalls (while adding to that cushion when disbursements exceed planned *spending* and *absorption*). However, this will need donors to allow recipient governments more flexibility in the timing of aid *spending* than is typically allowed, but it is an adjustment that recipient governments would do well to lobby for.

8 CONCLUSION

Beyond its immediate and personal effects as a chronic and potentially fatal disease, the HIV/AIDS pandemic has a demonstrated capacity to compromise and even reverse both economic growth and human development in moderate and high prevalence countries. The ultimate consequence is likely to be the failure to meet Millennium Development Goals generally and poverty reduction objectives specifically. The effects of this disease operate through several avenues. By reducing average life expectancy, increasing child mortality, and disrupting the development and transfer of social and human capital, HIV/AIDS compromises human development. Increasing rates of morbidity, loss of human capital, reduced investment incentives and the crowding out of public investment are all likely consequences of moderate to high HIV/AIDS rates that compromise growth. More directly, the poor are more vulnerable to HIV/AIDS infection and the presence of the disease reduces the likelihood of upward economic mobility. For the non-poor, the presence of HIV/AIDS infection within a family increases the likelihood of downward economic mobility and thus poverty.

To mitigate these effects, HIV/AIDS infection will need to be arrested, and ultimately reversed, and the morbidity and mortality outcomes of the disease will have to be mitigated by appropriate medical and social interventions. However, the resources needed for such an outcome are not within the capacity of moderate and high-prevalence countries, which are mostly low income and very often least developed. Thus, a substantial increase in the inflow of external resources will be necessary if Millennium Development Goal numbers one (reducing poverty), four (reducing child mortality) and six (reducing the ravages of HIV/AIDS, malaria and other major diseases) are to have any chance of being fulfilled. The estimated resource needs are, understandably, large (US\$55.1 billion for the 2006-2008 period). External resources are expected to make up 70 percent of this estimated cost (UD\$38.5 billion) and, though still well short of that requirement, the estimate of available external resources for the 2006-2008 period is substantial, i.e., US\$27.2 billion. If these resources are to be utilized, high-prevalence countries can expect a considerable increase in ODA inflows over the coming years.

However, despite the ravages of HIV/AIDS, many countries view this potential scale-up of aid with some trepidation. This is, in and of itself, not surprising. Large and sustained inflows do carry potential hazards. These include: aid dependence, unsustainable debt burdens, the disruptive effect of aid volatility and Dutch disease. In the context of a perceived need to maintain macroeconomic stability (in the form of low inflation, stable exchange rates and small fiscal and current account deficits) in order to protect economic growth, the potential adjustment costs of accommodating large aid inflows are also seen as undesirable.

Thus, the recent response of countries facing large aid inflows has been to restrict *macro-absorption* (by accumulation of reserves instead of making foreign currency inflows available for import expansion) and restricting *spending* (by keeping fiscal deficits well below what would be dictated by aid disbursements). Moreover, these actions are rarely balanced (because *spending* most often exceeds *macro-absorption*), leading to the need to sterilize excess money supply growth in order to maintain low inflation (and stable real exchange rates). Beyond the secondary consequences of high domestic interest rates (from sterilization), the failure to fully *macro-absorb* and *spend* aid (i.e., allowing concomitant increases in current account and fiscal deficits) has meant that only a fraction (and sometimes only a very small fraction) of aid has been *micro-absorbed* (made available to, and used to fulfill, the intended project or program objective).

Aid dependency and excessive debt accumulation are well understood potential byproducts of large aid inflows. However, they can be substantially mitigated through appropriate policies - maintaining domestic savings rates and ensuring the productive use of aid on the one hand, and a preference for grants over loans as the means of resource transfer on the other. The Dutch disease fear, despite its prominence in the policy literature, does not find strong justification either in the theoretical or empirical literature. Theoretically, excess capacity in the economy and/or productivity effects from aid inflows (all very likely outcomes of HIV/AIDS related flows) could be sufficient to negate any potential Dutch disease effects. Empirically, only weak evidence has been found for Dutch disease effects in multi-country studies and there has been virtually no evidence from single country studies. The fear of the (economically) disruptive effect of aid volatility remains quite valid, however. That effect is overwhelmingly supported in the empirical literature and reinforced by recent country experiences.

With respect to policy approaches, this paper argues that the dominant current approach, which appears to favor macroeconomic stability ahead of *micro-absorption*, is misguided. Given that HIV/AIDS affects growth directly (as well as indirectly) in ways that cannot be mitigated by a stable macroeconomy, mitigating the growth and human development effects requires urgent and direct attention to the pandemic itself. This means ensuring, and giving priority to, full and optimal *micro-absorption* of aid.

Such an approach implies ensuring that all aid reaches the intended target, that capacity and institution building are given early and urgent priority – in order to ensure the highest rate of return from each dollar of aid and an ability to use all aid effectively (i.e., with minimal capacity constraints). This approach would be most compatible with (and even dictate) a frontloading of aid and full (or very close to full) *macro-absorption* and *spending* of aid. The single caveat to this prescription comes from the need to protect the *micro-absorption* of aid (as well as the broader economy) from the disruptive effects of volatile aid flows.

Coordinated, less-than-full *macro-absorption* and *spending* (meaning reserve accumulation and delayed budget expansion), in order to build up a reserve cover that may allow governments to smooth project and program spending related to HIV/AIDS interventions, is justifiable *vis a vis* the potential cost of interrupted and unpredictable aid flows. The need for building that reserve (and entitlement) cover early in the scale-up phase provides an additional justification for the frontloading of aid. In the current development assistance regime, donor governments and agencies would not look favorably on such action, but recipient governments have a valid case for self managed aid-smoothing based on the balance of the evidence.

An approach that prioritizes successful *micro-absorption* is not, it is argued here, antagonistic to macroeconomic stability. However, it is not compatible with an approach that interprets a stable macroeconomic environment (in the context of a developing economy facing a devastating health crisis) as persistent single digit inflation, consistently stable real and nominal exchange rates and small fiscal and current account deficits. Full (or near full) *macro-absorption* and *spending* of aid and vigorous *micro-absorption* are all likely to be significantly disruptive to exchange rates and prices in the short-to-medium term and *require* significant fiscal and current account deficits. Thus, a more useful interpretation of macroeconomic stability would be “limited and quick correction of *unwarranted* movements in critical macroeconomic variables.”²² In short, successful and effective *micro-absorption* must remain the central policy objective if the ravages of HIV/AIDS are to be successfully mitigated and reversed.

If the scale-up in aid results in price and exchange rate responses that persist beyond the short run, there are a range of policies that would allow countries to maintain the competitiveness of their tradable goods sectors. However, none of these approaches offers a viable alternative to effective *micro-absorption* over the long run. In fact, they either amount to a partial or full abrogation of the responsibility to attempt full *micro-absorption* of aid (the need for which has been clearly identified) or actively undermine the micro-absorptive potential. Thus, they imply less aid or less effective aid and are not legitimate long-term policy alternatives to the full and effective *micro-absorption* of aid.

REFERENCES

- Adams C. and D. Bevan (2006). "Aid and the Supply Side: Public Investment, Export Performance, and Dutch Disease in Low-Income Countries," *The World Bank Economic Review*, 20(2), 261-290.
- Anand, K., C.S. Pandav, and L.M. Nath (1999). "Impact of HIV/AIDS on the National Economy of India," *Health Policy*, 47, 195-205.
- Arellano, Cristina, Aleš Buliš, Timothy Land and Leslie Lipschitz (2005). "The Dynamic Implications of Foreign Aid and its Variability," *IMF Working Paper (05/119)*, Washington DC: The International Monetary Fund.
- Arndt, C. (2006). HIV/AIDS, "Human Capital, and Economic Growth Prospects for Mozambique," *Journal of Policy Modeling*, 28, 477-489.
- Arndt, C. and J. D. Lewis (2000). "The Macro Implications of HIV/AIDS in South Africa: A Preliminary Assessment," *South African Journal of Economics*, 68(5), 856-857.
- Atingi-Ego, Michael (2005). *Budget Support, Aid Dependency, and Dutch Disease: The Case of Uganda*, Paper presented to The World Bank's Practitioners' Forum on Budget Support in Cape Town, South Africa.
- Berry, Albert and John Serieux (2006). "World Economic Growth and Income Distribution," in Jomo K. Sundaram and Jacques Baudot eds. *Flat World, Big Gaps: Economic Liberalization, Globalization, Poverty and Inequality*, Zed Books Ltd.
- Bevan D.L. (2005). *An Analytical Overview of Aid Absorption: Recognizing and Avoiding Macroeconomic Hazards*. Paper presented at the Seminar on Foreign Aid and Macroeconomic Management, Maputo, March 14-15, 2005.
- Boozer, Michael, Gustav Ranis, Francis Stewart and Tavneet Suri (2003). "Paths to Success: The Relationship between Human Development and Economic Growth," *Yale Economic Growth Center Discussion Papers 874*, Yale University.
- Booyesen, F. LE R. (2004). "Income and Poverty Dynamics in HIV/AIDS-Affected Households in the Free State Province of South Africa," *South African Journal of Economics*, 72(3), 522-545.
- Bourguignon, Francois and Mark Sundberg (2006). "Absorptive Capacity and Achieving the MDGs," *UNU-WIDER Research Paper No. 2006/47*.
- Bryceson, Deborah F. and Jodie Fonseca (2006). "Risking Death for Survival: Peasant Responses to Hunger and HIV/AIDS in Malawi," *World Development* 34(8): 1654-1666.
- Bulir, A. and A. J. Hamann (2003). "Aid Volatility: An Empirical Assessment," *IMF Staff Papers*, 50(1), 64-89.
- Clemens, M., C. J. Kenny and T. Moss (2004). "The Trouble with the MDGs: Confronting Expectations of Aid and Development Success," *CGD Working Paper*, 40. Center for Global Development Washington, DC.
- Corden, W.M. and J. P. Neary (1982). "Booming Sector and De-industrialisation in a Small Open Economy," *Economic Journal*, 92, 825-848.

- Drinkwater, Michael (2005). "HIV/AIDS and Agricultural and Southern Africa: What Difference Does it Make?" *IDS Bulletin* 36(2): 36-40.
- Drinkwater, Michael (2003). *HIV/AIDS and Agrarian Change in Southern Africa*, Presentation for the United Nations Regional Inter-agency Coordination and Support Office Technical Consultation on Vulnerability in light of the HIV/AIDS Pandemic, Johannesburg, September 2003.
- Elbadawi, I.A. (1999). "External Aid: Help or Hindrance to Export Orientation in Africa?" *Journal of African Economies*, 8(4), 578-616.
- Haacker, M. (2002). "The Economic Consequences of HIV/AIDS in Southern Africa," *Working Paper No. 02/38*, International Monetary Fund.
- International Monetary Fund (IMF) (2005a). *Monetary and Fiscal Policy Design Issues in Low-Income Countries*. DC: The International Monetary Fund.
- International Monetary Fund (2005b). *The Macroeconomics of Managing Increased Aid Inflows: Experiences of Low-Income Countries and Policy Implications*. DC: The International Monetary Fund.
- International Monetary Fund (2005c). *Review of PRGF Program Design –Overview*, Washington DC: The International Monetary Fund.
- McDonald, S. and J. Roberts (2006). "AIDS and Economic Growth: A Human Capital Approach," *Journal of Development Economics*, 80(1), 228-250.
- Misselhorn, Alison (2005). "What Drives Food Insecurity in Southern Africa? A Meta-analysis of Household Economy Studies," *Global Environmental Change* 15: 33-43.
- Nkusu, M. (2004). "Aid and the Dutch Disease in Low-Income Countries: Informed Diagnoses for Prudent Prognoses," *Working Paper No. 04/49*, International Monetary Fund.
- Pallage, S. and M.A. Robe (2001). "Foreign Aid and the Business Cycle," *Review of International Economics*, 9, 636-668.
- Parker, J.C. (2003). *HIV/AIDS' Impact on Pro-Poor Economic Growth*. HIV/AIDS Response Team, DAI, May.
- Quatteck, K. (2000). "The Economic Impact of AIDS in South Africa: a Dark Cloud on the Horizon," *ING Barings South African Research*, 2002.
- Rajan and Subramanian (2005). "What Undermines Aid's Impact on Growth," *IMF Working Paper 05/126*, Washington DC: The International Monetary Fund.
- Ranis, G., F. Stewart and A. Ramirez (2000). "Economic Growth and Human Development," *World Development*, 28(2), 197-219.
- Sekkat, Khalid and Aristomene Varoudakis (2000). "Exchange Rate Management and Manufactured Exports in Sub-Saharan Africa," *Journal of Development Economics*, 61(1): 237-253.
- Sen, A.K. (1999). *Development as Freedom*. New York: Knopf.
- Sepehri, A. S. Moshiri (2004). "Inflation-Growth Profiles across Countries: Evidence from Developing and Developed Countries," *International Review of Applied Economics*, 18(2), 191-207.

- Serieux, J. (2001). "The Enhanced HIPC Initiative and Poor Countries: Prospects for a Permanent Exit" *Canadian Journal of Development Studies*, 11(2), 527- 548.
- Tae, Wan-Son (1972). *Development of Korean Economy: Past, Present and Future*, Seoul: Samhwa Publishing Company.
- Tornell, A. and P. R. Lane (1999). "The Voracity Effect," *American Economic Review*, 89(1), 22-46.
- United Nations. (2001). *Declaration of Commitment on HIV/AIDS*. United Nations, June.
- United Nations. (2006a). *The Millennium Development Goals Report*. United Nations, 2006.
- United Nations. (2006b). *Report on the global AIDS Epidemic*. United Nations, 2006.
- UNDP. (2004). *HIV/AIDS in Eastern Europe and the Commonwealth of Independent States. Reversing the Epidemic: Facts and Policy Options*. Regional Human Development Report, United Nations Development Programme.
- UNDP. (2003). *HIV/AIDS and Development in South Asia*. Regional Human Development Report, United Nations Development Programme.
- van Wijnbergen, S. (1986). "Aid Export Promotion and the Real Exchange Rate: An Africa Dilemma?" *DRD Discussion Paper*, 199, Washington.
- Walters, Bernard, (2006). "The Fiscal Implications of an MDG-Related Scale-up in HIV/AIDS Financing" paper presented to the *Global Conference on Gearing Macroeconomic Policies to Reverse the HIV/AIDS Epidemic*" UNDP Poverty Centre, Brasilia, Brazil, November 20-21, 2006.
- Younger, Stephen D. (1992). "Aid and the Dutch Disease: Macroeconomic Management When Everybody Loves You," *World Development*, 20(11): 1587-1597.
- .

NOTES

1. It should be noted, of course, that, by most estimates, the weighted poverty rates and the absolute numbers in poverty in sub-Saharan Africa most likely rose (see, for example, Berry and Serieux (2006)) but our interest here is in the average country performance.
2. It should be noted that in Africa, in particular, much of farm labor and management is provided by women. This is particularly true with respect to food production. Thus the withdrawal of women from the labor force to take care of ill partners or children may have significant productivity implications - as is suggested by the data on food production (Figure 3).
3. The available data are insufficient to determine this directly.
4. This includes both the direct costs of the epidemic (such as treatment) and the indirect costs mentioned above, including lost income.
5. See, for example, the discussion in Clemens, Kenny and Moss (2004).
6. The Multilateral Debt Relief Initiative is a joint initiative of the World Bank's International Development Association, the IMF and the African Development Bank, to write off 100 percent of the debt owed to these institutions by countries that have reached the completion point of the HIPC debt relief initiative.
7. The Dutch disease phenomenon is specific to small open economies. The anticipated relative price shift that is at the heart of the phenomenon would be significantly watered down in an economy that is large relative to world markets.
8. The group of ten countries are not necessarily the ten highest aid recipients for the 1970-2005 period, but the ten highest aid recipients for whom all the relevant data were available.
9. The ranges cover the high and low estimates across various model specifications.
10. A trade balance implies that the economy is on its production possibility frontier because traded goods are not differentiated. Thus, when the value of exports equal imports, the net value of traded goods consumed is equal to the net value of traded goods produced.
11. This effect can be thought through in many different ways. If the real exchange rate is defined as the price of traded goods relative to the price of nontraded goods (one of its many definitions), the deficit result derives directly (understanding, of course, that the decrease in that ratio implies an appreciation). If the more common definition of exchange rates is considered ($\epsilon P^*/P$ - the exchange rate multiplied the price of foreign goods deflated by the domestic price index), sometimes referred to as the measure of competitiveness, and the nominal rate is fixed, the rise in domestic prices gives the same result. Under a flexible exchange rate regime, nominal appreciation from an increased supply of foreign currency and the rise in domestic prices from increased aggregate demand (though the overall price increase may be somewhat moderated by the fall in the price of imported goods) gives the same result.
12. Bottlenecks and liquidity constraints (or similar capital market imperfection), as well as Keynesian-type rigidities, can be used to explain the condition of excess capacity.
13. Even Rajan and Subramanian (2005) found only relative decline of exports rather than immiserization.
14. Not *spending* the aid does not necessarily mean that prescribed projects do not materialize; it may simply imply that each dollar ostensibly spent is matched by a *spending* reduction elsewhere.
15. The exception was Ghana, where a desire to replenish depleted reserves seemed to have been the overriding factor initially.
16. If the government spends the aid directly to import goods and services, this mechanism is bypassed and there is no exchange rate effect. There is also no exchange rate or inflationary effect if the increase in reserves is matched by an increase in government deposits at the central bank (i.e., aid is neither spent nor macro-absorbed).
17. In the case where aid is transmitted through a non-government agency (NGO), this would be a mute point since such an agency would be unlikely to have the option to spend or not to spend that aid (it would not be fungible).
18. It should be noted that, in this paper, we are abstracting from issues regarding the appropriate pre-aid budget deficit/surplus levels. Whether governments choose to have a surplus, deficit or balanced budget before aid flows are taken into account is not an issue that is within the mandate of this paper to consider.
19. Even if the real exchange rate appreciation is not reversed, a productivity effect that extends to the tradables sector will allow that sector to remain competitive even in the face of an appreciated exchange rate, thus removing the threat of Dutch disease.
20. It may also have the unintended effect of protecting the export sector while undermining the import-competing sector.
21. In fact, in the case of access to antiretroviral therapies, interruptions could be dangerous because of the possibility of creating drug resistant strains of the virus.
22. 'Unwarranted' here would relate to movements that are not part of the corrective mechanisms for exogenous shocks or responses to policy initiatives (such as addressing HIV/AIDS) that do not signal policy failures.



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