

# **Foreign Aid for Tackling HIV/AIDS & Human Development Disaster: Can A Large Inflow Cause Macroeconomic Instability?**

## **Theory and Evidence**

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## **Tackling HIV/AIDS and Human Development Disaster**

### **I. Introduction**

Globally, AIDS has killed more than 23 million people. In 2004 alone, more than 3 million people died, and nearly 5 million people became HIV-positive. An estimated 40 million people worldwide are now living with HIV. This number continues to grow. The number rose from 35 million in 2001 to 38 million in 2003. Today the figure stands at close to 40 million. With an estimated 15,000 people being infected with HIV each day, HIV has become an epidemic. At this rate (about 1.5 million a year), the number of HIV infected people globally will be over 60 million by the Millennium Development Goals (MDGs) target year of 2015. While this is frightening, what is more disturbing is its distribution – more than 65% of HIV infected people live in sub-Saharan Africa, and 95% of new infections occur in the developing world.

The epidemic of HIV/AIDS globally, and in particular in countries of sub-Saharan Africa, is causing a human development crisis. Although it is a slow killer, an estimated 4,000 people die of AIDS every day, contributing to nearly 1.5 million deaths a year, which occur mostly in developing countries.<sup>1</sup> Thus, its human dimension is no way lesser than large disasters that require emergency response.

The full economic impact of HIV/AIDS in high prevalence countries can become apparent only in the long run. When a large number of children and the working age population becomes HIV positive, it directly reduces the supply of labour through death. It also seriously constrains the labour force participation of other members in the household as they engage in caring for the infected relatives. Through the adverse impacts on educational attainment and strains on government social and infrastructure expenditure programs, the high prevalence of HIV/AIDS will also impair the long-term growth potential. So, unless this epidemic is tackled now, the long-run growth of the countries with a high HIV/AIDS prevalence will suffer seriously. (See Haacker, 2004).

Thus, there is a vicious circle; HIV/AIDS and the human development crisis adversely affect growth, and the faltering growth causes poverty, forcing the female household members to

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<sup>1</sup> See report of the International AIDS Vaccine Initiative [www.iavi.org/AIDSandMDG\\_report](http://www.iavi.org/AIDSandMDG_report)

prostitution, which then heightens the risk of infection. As the rate of infection goes up, we have a cumulative circular causation of poverty and HIV/AIDS.

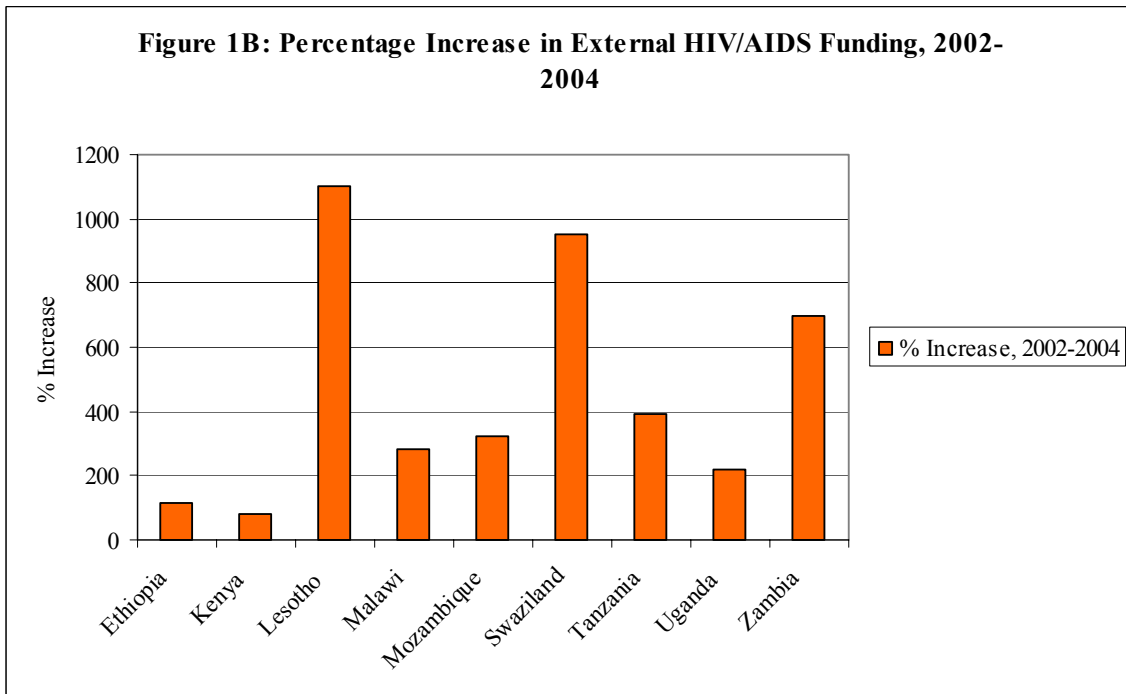
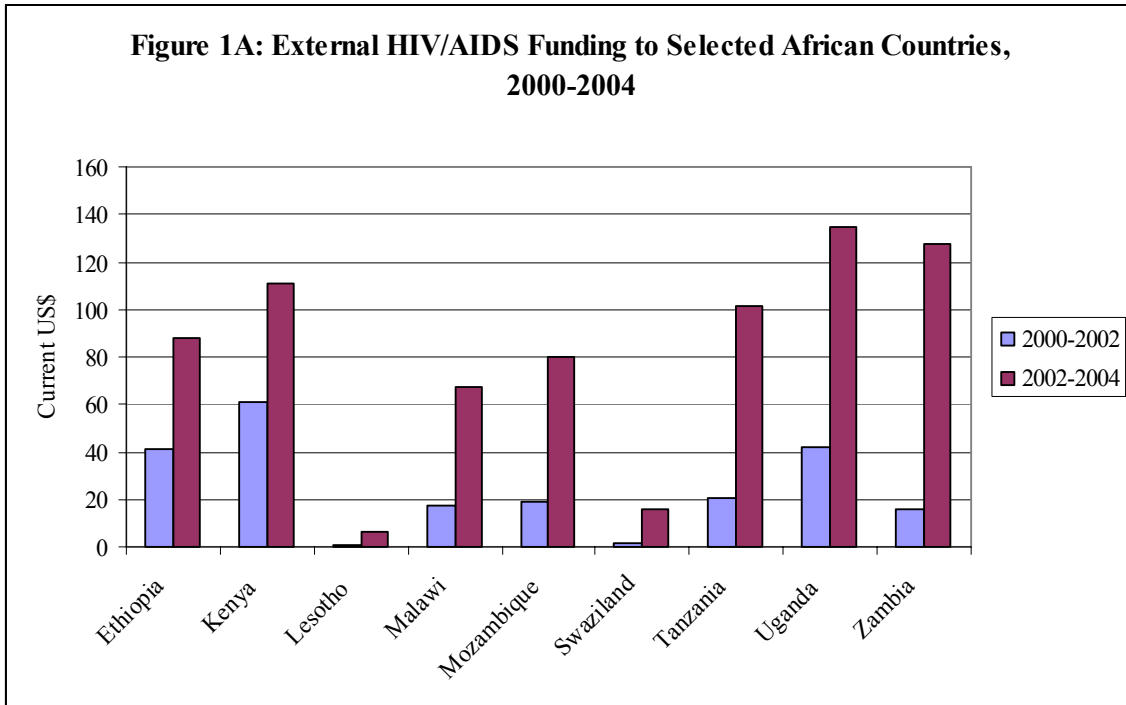
Therefore, whichever perspective – human development crisis or economic growth – one takes, there is an urgency in dealing with HIV/AIDS. The infection rate needs to be capped and then reversed. At the same time, 40 million infected people need to be treated. The task is not easy – it involves complex socio-cultural and economic issues.

On the economic front, one burning issue is financing – how much is needed, what are the sources, where and how to spend. The latest UNAIDS estimates show that the cost of a comprehensive response to HIV/AIDS in low- and middle-income countries would rise from \$9.6 - \$11.3 billion in 2005 to between \$14.1 - \$18.8 billion by 2007 (UNAIDS, 2005). In several countries, financing needs for HIV/AIDS programs exceed total public expenditure and could rise up to 10% of GDP, putting enormous pressure on their budgetary situation. Therefore, the financing of essential and viable HIV/AIDS treatment and prevention programs would require large aid inflows. The international community has committed a large sum to support national efforts. For example, out of about \$6 billion spent globally on HIV/AIDS related programs in 2004, close to \$3.7 billion came from international sources (OECD, 2005). This represents a near doubling of international efforts between 2002 and 2004.<sup>2</sup>

For many sub-Saharan countries where HIV/AIDS prevalence is very high and more than 65% of globally infected population live, foreign aid/grants have been the dominant source of funding for HIV/AIDS related programs. As can be seen from Figure 1, HIV/AIDS related external funding increased significantly in these countries in the space of two years. In the case of Lesotho, the increase has been around 1100%.

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<sup>2</sup> Multilateral assistance comes from agencies such as the World Bank, and the UNDP's Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria (GFATM), financed by bilateral donors and private foundations such as the Gates and Clinton Foundations. In addition to contributing to the GFATM, bilateral donors also fund HIV/AIDS programs directly. One significant initiative is that of the US. Under the President's Emergency Plan for HIV/AIDS Relief (PEPFAR), the US has committed \$15 billion for 15 countries over five years (2004-2008).



Source: OECD (2005) as reported in Lewis (2005)

Therefore, concerns have been expressed about these countries' ability to absorb this sudden surge in aid flows due to institutional weakness and the lack of critical complementary inputs such as skilled manpower. There are also other concerns, such as the possibility of disincentive effects on domestic resource mobilisation and an increased aid dependency, vulnerability to aid uncertainty and corruption etc. One particular concern that received increased attention in recent times is the possibility of large aid-induced macroeconomic instability such as higher inflation, and real appreciation of domestic currency (UN, MDG Report 2005, pp. 239-240).<sup>3</sup> In other words, will the rise in inflation and real appreciation of domestic currency be large enough to adversely affect long-term growth so that aid inflows can become immiserising?

This paper is a brief survey of theories and evidence related to the likely aid-induced macroeconomic instability. In particular, the questions it tries to address are:

1. To what extent can the utilisation of foreign assistance to combat HIV/AIDS cause macroeconomic instability to the detriment of long-term growth?
2. If there is any possibility of such instability, are there any policy instruments to mitigate it?
3. How to *macroeconomically* track if countries receiving foreign assistance are spending and absorbing it?
4. What should be the overall macroeconomic policy framework to achieve HIV/AIDS objectives without causing macroeconomic instability?

In answering the above questions, one needs to bear in mind that foreign aid is a transfer of resources to the recipient countries. In the standard foreign aid model, the transfer happens through real appreciation of the domestic currency, which widens the trade gap. That is, foreign aid helps finance a larger trade gap caused by increased import demands due to increased economic activity arising from aid-funded projects. Hence some real appreciation is unavoidable for the absorption of foreign aid. The real appreciation becomes problematic if that hinders export growth; that is, the trade gap widens mainly due to reduced exports. The key to prevent this from occurring is to offset the impact of real appreciation on

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<sup>3</sup> See Heller (2005a) and Lewis (2005) for brief reviews of issues.

competitiveness by productivity enhancing measures. In the short-run, the government can also respond with policies, such as export subsidies and exchange rate controls.

The one case where foreign aid can be absorbed without real appreciation is commodity aid when resources are transferred directly, or the entire aid is used to buy *non-competitive* imports<sup>4</sup> without bringing the foreign currency into the recipient country. Technical assistance is another case which is least likely to cause real appreciation as the money is spent on foreign consultants who spend most of it in their home countries. This is an important observation as the bulk of the HIV/AIDS related foreign funding is likely to be used to buy essential drugs abroad to be transferred directly to the HIV/AIDS affected countries, and hence is unlikely to have any significant adverse effect on the real exchange rate.

The paper is organised as follows: Section II describes the rationale of foreign aid inflows and transfer mechanisms under the fixed and flexible exchange rate systems; Section III provides a survey of the theoretical possibilities and empirical evidence of aid induced so-called “Dutch disease”; Section IV uses the analytical framework recently developed within the IMF to examine policy options for the aid receiving countries; Section V draws policy implications for HIV/AIDS related aid inflows; and Section VI contains concluding remarks.

## **II. The Rationale for Foreign Aid**

As is well known, the theoretical rationale for foreign aid (FA) is filling the savings-investment and/or foreign exchange gaps: developing countries have a deficient level of domestic savings to finance a level of investment necessary to achieve a desired rate of economic growth, and/or limited foreign exchange reserves to acquire imported capital goods.<sup>5</sup> The role of FA within the two-gap model can be shown by using the national income identity.

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<sup>4</sup> Goods and services that are not domestically produced or goods and services which would have been imported even in the absence of foreign aid.

<sup>5</sup> The gaps produced by the savings or exports required for the planned investment or importation of capital goods to achieve a target growth rate. In this case, the gaps are  
(a) savings–investment gap =  $s^*Y - sY$ , where  $s^*$  is the target savings rate and  $s$  is the actual savings rate;  
(b) foreign exchange gap =  $m^*Y - mY$ , where  $m^*$  is the target import rate and  $m$  is the actual import rate, permitted by export earnings. In the pre-take-off stage, a developing country would have a dominant savings–investment gap, followed by a dominant foreign exchange gap. See, Chenery and Bruno (1962), Chenery and Strout (1966) and Thirlwall (1999).

The national income or gross domestic product (Y) is equal to gross national expenditure or the sum of consumption (C), government expenditure (G), investment (I) and net exports (X – M) *ex post*. That is,

$$Y = C + I + G + X - M \quad \dots (1)$$

GDP is also equal to the sum of consumption, savings (S) and tax (T), so that

$$Y = C + S + T \quad \dots (2)$$

From (1) and (2), we get

$$S + T = I + G + X - M$$

$$\text{Or, } I - [S + (T - G)] = M - X = F - J \quad \dots (3)$$

where  $T - G =$  government savings (fiscal surplus/deficit).

$F - J =$  the difference between net capital inflows (F) and net factor services to abroad (J)<sup>6</sup>

Equation (3) states that *ex post* the gap between investment (I) and total domestic savings (S + T – G) must be equal to imports-exports gap. That is, if there is any shortfall in domestic savings (compared to investment), that must be met by foreign savings (F – J). For most low-income countries, foreign savings are foreign aid (FA).<sup>7</sup>

There is no reason for the two gaps to equal *ex ante*. Chenery and his associates argued that aid was more effective where the trade gap (M – X) or the foreign exchange gap (F – J) was larger *ex ante*. A binding or dominant trade gap (or foreign exchange gap) means that the country is unable to utilise all its savings. That is, it cannot increase investment even when domestic savings are available due to a shortage of critical imports. The country suffers from deficient demand (i.e., investment < savings) and has Keynesian type unemployment.

Bacha (1990) extended the 2-gap model into a 3-gap model, where the fiscal gap (T-G) constraints the private sector investment at a level below what the available savings permit. This follows from an assumed relationship between private and public investment as,

$$I_p = kI_g \quad \dots (4)$$

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<sup>6</sup> From the balance of payments, the excess of imports over exports is equal to foreign transfers. In (3) we are assuming that foreign reserves accumulation is netted out of the capital account of the balance of payments to obtain the net value of capital inflows.

<sup>7</sup> Most developing countries receive minuscule amounts of private capital. Some, however, have substantial amount of remittance income.

Where  $k > 0$

Equation (4) recognises that in developing countries, government investment in infrastructure and basic industries sets an upper limit for profitable private investment.<sup>8</sup> The low level (or lack of) of fiscal surplus ( $T - G$ ) in the recurrent budget (referred to as primary surplus) limits public investment ( $I_g$ ), and according to (4) limits private investment ( $I_p$ ).

The government can resort to deficit financing by borrowing from the central bank, as in most developing countries the domestic capital market is very thin. Borrowing from the central bank or printing money yields seignorage or inflation tax through which the unutilised private savings can be transferred to the government for public investment, which in turn induces higher private investment.<sup>9</sup> However, this method of financing public investment has a limit as *excessive* inflation may become debilitating for private investment.

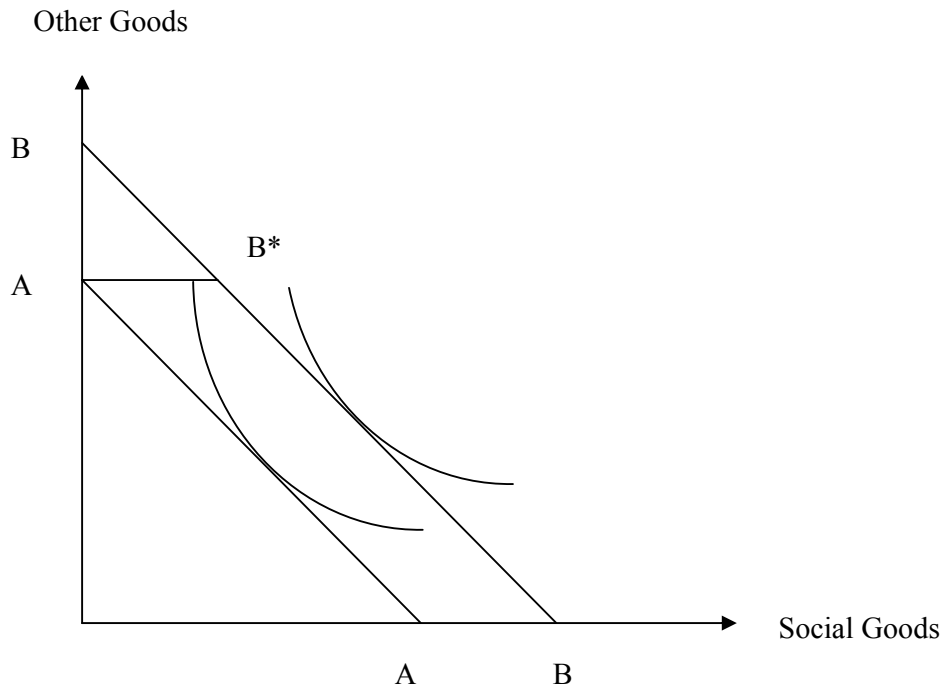
In such circumstances, according to the 3-gap model, foreign aid can relax this constraint by supporting the budget. From the development or planning (*ex ante*) perspective, the government of a developing country can estimate the fiscal gap, and place the foreign exchange needs to the donors, who can then fill the gap.<sup>10</sup> In other words, FA shifts the government budget constraint outward and allows government to spend more to meet development needs without having to resort to inflationary financing (Figure 2).

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<sup>8</sup> Equation (4) implies that public investment crowds-in private investment. The crowding-in hypothesis is rooted in Gerschenkorn's analysis of European history and has empirical support in the successful economies of East Asia, Brazil and Mexico. Based on econometric analysis of 72 countries, Barro (1989, p. 29) concludes, "an extra unit of public investment induces about a one-for-one *increase* in private investment" (emphasis original).

<sup>9</sup> This process is known as "forced savings"; see Kalecki (1976).

<sup>10</sup> There is considerable debate about whether fiscal deficit causes FA (demand driven FA) or FA causes fiscal deficit (supply driven FA). Most critics believe that aid is supply driven. For example, according to Easterly (2003), Judith Tendler's observation as far back in 1975 that "A donor organization's sense of mission ... relates not necessarily to economic development but to the commitment of resources, the moving of money..." remains



**Figure 2: Aid and Government Budget Constraint**

The horizontal axis represents social goods such as education, health and those programs which *directly* enhance human development indicators. The vertical axis represents government programs, such as military, civil service and projects which do not *directly* contribute to human development. As can be seen from Figure 2, when the government budget constraint shifts from AA to BB, it can achieve higher welfare. However, donors and development practitioners have raised concerns about the fungibility of aid, in particular the use of aid in expanding the unproductive public sector (included in other goods in Fig. 2). If donors want to restrict the use of aid to the social goods (infrastructure, health, education, etc.), the budget constraint will shift with a kink at B\*.

The development practitioners have also pointed out the possibility of lax revenue efforts by the government in the presence of large FA inflows. In that case the government budget constraint will shift to a position somewhere between AA and BB. (In the extreme case of a full offset, the budget constraint will remain at AA).

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valid even today. That is, donors are judged by the amount money spent and hence are driven by the desire to

There are also issues relating to poor governance and the possibility of corruption, especially in the case of project aid involving infrastructure. In response, donors are now increasingly using aid conditionality for tax and other reforms in order to overcome these problems.

The effectiveness and welfare implications of such tied and aid conditionality remain debateable. (See McGillivray, 2000, for a survey of issues surrounding aid fungibility and fiscal behaviour. Easterly, 2003 provides a critical appraisal of the effectiveness of aid conditionality and aid selectivity).

### **The Mechanism of Resource Transfer**

Since foreign aid (FA) is mainly a source of capital inflows, it should have similar macroeconomic effects as any other capital flows. However, since FA comes largely through the government, it can influence its effects by carefully choosing its expenditure or utilisation.<sup>11</sup>

As highlighted earlier, the transfer of resources associated with foreign aid happens through real appreciation of the domestic currency. However, the mechanism through which real appreciation occurs depends on the exchange rate regime of the recipient country. To illustrate this process, we need to begin by looking at the monetary balance sheet of an open economy as presented in Table 1.

Items in the foreign sector are recorded in the capital account of the balance of payments. For most developing countries, liabilities of the foreign sector (capital inflows) are larger than its assets (outflows). Hence, their capital account shows a surplus matched by current account deficit and adjustments in central bank's net foreign reserves (under a fixed exchange rate system, or the entire banking sector's foreign currency holdings under the flexible exchange rate system). That is, inflows of capital must finance the current account deficits and the residual is balanced by drawing on foreign reserves.

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“move money”.

<sup>11</sup> A small portion of FA is channelled through non-government organisations. Some donor agencies, e.g., USAID, spend the aid money directly on projects and their aid does not support government budget.

**Table 1: Monetary Balance Sheet for a Developing Open Economy**

Account	Assets	Liabilities
Government	Deposits with central & commercial banks (GD + BD)	Outstanding debts
Central Bank	1. Net foreign reserve (NFR) 2. Credit to government (CRG)	1. Currency (C) 2. Reserves for deposits (R) 3. Government deposits (GD)
Commercial Banks	1. Reserves for deposits (R) 2. Lending to private sector (CRP) 3. Lending to government (BRG)	1. Deposits (D) - Private (PD) - Public (BD)
Private Sector	1. Currency (C) 2. Deposits (D) 3. Lending to government (PRG)	1. Loans from commercial banks (CRP)
Foreign Sector	1. Lending overseas 2. Deposits in foreign banks 3. Outward foreign direct investment	1. Foreign aid (FA) 2. Commercial lending to the government/public sector 3. Commercial lending to the private sector/banks 4. Foreign direct investment

On the domestic side, each account (except the government) is balanced with assets equalling liabilities.<sup>12</sup> Outstanding positive government debts (liabilities) imply that the government was running budget deficits. This was financed by a combination of borrowings from the central bank (CRG), from the commercial banks (BRG) and from the non-bank private sector (PRG). In an open economy, the government can also borrow from overseas (or receive FA). Each source of borrowings has different implications for money supply (MS). The domestic capital or bond markets in most developing countries are not well developed to allow large-scale government borrowings from the non-bank public; nor do governments have easy access to the international capital market. Thus, they resort to borrowings from the banking sector, but mostly from the central bank and attempt to fill the remaining gap with FA.

Money supply (MS) is defined as:

$$MS = C + D \quad \dots (4)$$

<sup>12</sup> Strictly speaking, none of the accounts will necessarily balance because of physical assets and net worth, which are ignored here. However, physical assets are likely to be particularly important in the government and the private sector. Their inclusion draws attention to the links between the monetary and real sectors of the economy.

Central bank's monetary liabilities (B) are:

$$B = C + R + GD \quad \dots (5)$$

Dividing equation (4) by equation (5), we obtain:

$$MS/B = (C + D)/ (C + R + GD) \quad \dots (6)$$

That is,

$$MS = [(C + D)/ (C + R + GD)] B \quad \dots (7)$$

Dividing both denominator and numerator of the right hand side of equation (7) by D, we obtain:

$$MS = [(c + 1)/ (c + q + g)] B$$

Or  $MS = m B \quad \dots (8)$

Where  $c = C/D$  currency-deposit ratio

$q = R/D$  reserve-deposit ratio

$g = GD/D$  government deposit with central bank-deposit ratio

$m = (c + 1)/ (c + q + g)$  money multiplier

Since central bank's monetary liabilities must equal its monetary assets ( $H = NFR + CRG$ ), equation (8) can be expressed in terms of central bank's monetary assets (H) as:

$$MS = m H \quad \dots (8a)$$

Equation (8) implies that money supply is linked to central bank's liabilities through money multiplier (m).<sup>13</sup>

In the standard textbook version, the money multiplier (m) is assumed constant, at least in the short-run. Thus, the link between B (or H) and MS is projected as a rigid one. For example, an increase in the net foreign reserves (NFR) of the central bank due to an increase in net aid flows should lead to an increase in money supply by the multiple of money multiplier (m). However, whether an increase in foreign aid leads to an increase in central bank's net foreign reserves, and hence a multiple increase in money supply, depends on the exchange rate regime of the country.

#### *Fixed exchange rate*

Spending foreign aid *domestically* requires exchanging foreign currency denominated aid into local currency. When aid is disbursed, the government sells the foreign currency to the central

bank at the fixed exchange rate, so the foreign exchange holding (NFR) of the central bank goes up.

This increase in central bank's asset is balanced by an increase in its liabilities when the central bank issues equivalent domestic currency to the government for spending locally. That is, there is an immediate increase in the supply of money equivalent to the local currency value of disbursed foreign aid. There will be further increases in money supply depending on the private sector's portfolio choice between currency and deposits and through domestic credit creation when banks receive deposits out of government's aid money expenditure. Thus, money supply goes up by a multiple of initial increase in the base money, depending on the size of  $c$ ,  $q$  and  $g$ , which in turn depend on the behaviour of both the banking and the non-bank private sectors.

The increased money supply is likely to lead to inflation. Thus, an increased inflow of FA may lead to real appreciation of domestic currency. This can harm a country's competitiveness and net exports. The central bank can offset (sterilise) the aid induced increase in its assets (NFR) in a number of ways. First, it can sell government bonds (CRG) to the non-bank private sector. Second, it can raise the reserve requirement for the commercial bank deposits and thereby reduce their ability to create credit. Thirdly, it can ask the government to shift its deposits from commercial banks to the central bank. This, too, will reduce commercial banks' ability to create credit.

More importantly, the central bank can sell the foreign exchange, which it received from the government, to the private sector to mop up the initial injection of liquidity. This facilitates payments for increased imports induced by the increase in economic activity due to aid-financed government expenditure (the multiplier effect). This is how the central bank facilitates the absorption of foreign aid.<sup>14</sup>

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<sup>13</sup> Because central bank's total monetary liability is the source of money supply (according to equation 8), it is called *base money* or *high-powered money*.

<sup>14</sup> Absorption, here, is used differently from the traditional usage of the term, "absorptive capacity" which is related to microeconomic issues such as availability of counter fund, project readiness, project management, and institutional factors such as governance.

### *Flexible exchange rate*

Under a flexible exchange rate system, the central bank does not intervene in the foreign exchange market, and therefore FA inflows should not affect money supply. In a flexible exchange rate system, the government sells the foreign currency in the open market for exchanging foreign currency denominated aid into local currency. The increase in the supply of foreign currency reduces its price in local currency; i.e., the local currency strengthens vis-à-vis the foreign currency.<sup>15</sup> Thus, in a flexible exchange rate system, real appreciation of the local currency happens via nominal appreciation.

The government in reality does not sell the entire aid to the open market, but deposits the foreign exchange either at the central bank or at commercial banks. When it is deposited at the central bank, initially, NFR increases, but it is offset by the decrease in government debt to the central bank, leaving the total money base unchanged. But as soon as the government draws on its deposits to finance expenditure, net domestic assets and base money increase.

When the government deposits the foreign currency aid at commercial banks rather than at the central bank, FA inflows do not automatically increase base money. But this increases commercial banks' ability to create credit. As commercial banks sell foreign currencies in the market in response to increased imports demand due to increased economic activity, there will be nominal and real appreciation of domestic currency.

Thus, regardless of the exchange rate regime, theoretically speaking, large foreign aid inflows can cause real appreciation of domestic currency. As noted earlier, this is, in fact, essential for real resource transfer to developing countries. The real appreciation widens the trade gap, which is filled by increased aid flows. *The assumption here is that the trade gap widens mainly due to increased imports.* That is, the counterpart of financial aid flows is imports of goods and services.

However, too large real appreciation may adversely affect the tradable sector – a situation referred to as “Dutch disease”.<sup>16</sup> That is, foreign aid could be paradoxically harmful in the

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<sup>15</sup> Exchange rate (e) is defined as a price of one unit of foreign currency in terms of local currency (e.g. 1 USD= Rs. 60). Therefore, when exchange rate (e) falls, it means appreciation of local currency.

<sup>16</sup> The term Dutch disease was used to describe the adverse impact of a discovery of natural gas on the Dutch manufacturing sector. A sudden surge in export earnings from natural resources sector causes real appreciation of the local currency which disadvantages manufacturing exports.

long run, if it leads to the shrinkage of the tradable sector. If that happens then there would be an ever-widening trade gap needing continuous aid financing. The following section reviews the theory and evidence of possible Dutch disease or of a transfer paradox.

### III. Dutch Disease – The Theory

The first formal treatment of real exchange rate misalignment due to large FA inflows triggering a vicious circle from FA flows to stagnating exports and deteriorating external balance (a Dutch disease like syndrome) is van Wijnbergen (1986). Van Wijnbergen disaggregated the economy into tradable (T) and non-tradable (NT) sectors and examined the impact of foreign aid on the relative price (PT/PN).<sup>17</sup>

In the two sector traded – non-traded model, it is assumed that PN is domestic demand determined and PT is determined in the world market and hence is given for a small open economy. When FA is spent domestically, according to van Wijnbergen, a large portion falls on the NT sector as government services and infrastructures are largely non-tradable. This causes a rise in PN and hence a real appreciation (PT/PN falls). As a result, resources shift from the T-sector to the NT-sector, and the T-sector shrinks. To the extent that part of foreign aid induced spending falls on the T-sector, the availability of exportables declines. Furthermore, the increased expenditure due to the multiplier effect of the initial increase in expenditure causes imports to rise. The net effect of a decline in exportables and increased imports is a deterioration of the external balance. The adverse welfare effect is exacerbated if the export sector is characterised by “learning-by-doing” (LBD) externalities, and hence have higher productivity than the NT sector. With the shrinking of the export sector, the productivity of the whole economy suffers. In the words of van Wijnbergen (1986, p. 130), “This point may be worth stressing: *substantial amounts of aid will put upward pressure on the real exchange rate and will in that way counteract the export promotion schemes often recommended by the aid donors.*” (Emphasis original). In such a circumstance, according to van Wijnbergen, the export sector (especially if it is characterised by LBD infant industries) should be supported with increased production subsidies.

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<sup>17</sup> The relative price (PT/PN) between the traded and non-traded sectors can also be regarded real exchange rate. PT is a proxy for the world price (in local currency) while PN represents domestic price level. However, the two-gap model ignores the role of relative prices, in particular between tradable and non-tradable sectors (Findlay, 1973; 1984).

### Optimum Aid Level and Aid Laffer Curve

The Dutch disease model implies that there is an optimal level of aid beyond which the effectiveness of aid declines. A sudden surge in FA flows may even reduce real income and create a vicious circle of aid-dependence leading to an aid or a debt trap. This may also arise from a lack of aid absorption capacity, mismanagement, and poor governance.

Researchers who empirically examined the hypothesis of diminishing returns to aid used an aid-squared term in their models. The coefficient of the aid-squared term was consistently found negative and significant. However, the threshold level for the diminishing returns to set in varies considerably – ranging from 15% to 45% of GDP.

Gomanee *et al.* (2003) were critical of the earlier aid threshold (or Laffer curve) empirical studies. They point out that these studies imposed a particular form of non-linearity, specifically that the relationship between aid and growth has an inverted U-shape – first positive and then negative. This also implies that the number of thresholds is one. Instead, there could be more than one turning point. Thus, Gomanee *et al.* used a technique that allows data to determine the number of thresholds (i.e. no prior imposition of the type of non-linearity). The technique is also based on asymptotic theory so that it is possible to test the statistical significance of estimates. Their “results show that there is a threshold beyond which aid becomes effective, but no evidence of a second threshold in aid beyond which aid becomes less effective” (Gomanee *et al.*, 2003, p. 16). That is, while too little aid is ineffective (and can even be costly in terms of management etc.), there is no evidence that too much aid is harmful.

### **Transfer Paradox**

Yano and Nugent (1999) introduced an interesting twist to Dutch disease debate. In their 2-factor, 3-goods (exports, imports and non-tradable) model with an import tax (tariff), FA inflows can paradoxically reduce the overall welfare of the recipient country.<sup>\*</sup> However, in contrast to the Dutch disease, the immiserising effect of FA happens, in the Yano-Nugent model, due to a decline in the price of NT. While in the Dutch disease model, excess demand for NT goods causes PN to rise (implying sluggish or inelastic supply of NT), in the Yano-Nugent model aid-funded projects cause an expansion of NT goods (infrastructure, education, health etc., as well as with import controls), and hence a reduction in PN. This result, however, depends on the presence of import tariffs responsible for the expansion of the import-competing sector and the contraction of the export sector. Import barriers or tariffs make the import-competing sector essentially non-tradable. Thus, the Yano-Nugent model shows that if aid finances *excessive* expansion of import-substituting activities (protected by tariffs), the real income of a small country may decline (as in the Johnson model). Note that this result depends on an excessive expansion of the NT sector. No transfer-paradox happens when the NT sector expands to keep the demand-supply balance at the existing price level.

Choi (2004), in a theoretical model involving 2 factors and 3 goods, shows that the possibility of a reduction in PN is remote. According to Choi (2004, p. 250), “As long as the entire amount of foreign aid is *not* used for capital formation in the import-competing sector, or some development aid is used in the export sector, the transfer paradox cannot occur”. (Emphasis original). In their own empirical work, Yano and Nugent (1999) themselves did not find much evidence to support their theoretical arguments. Only in four countries out of 44 in the sample, did they find some evidence of a transfer paradox. The results were sensitive to the inclusion of Israel in the sample and other variables in the estimated equation. Only in Uganda and Congo, the results remained invariant to the inclusion of Israel.

In support of his theoretical argument against Yano-Nugent transfer paradox model, Choi (2004) cited the example of the Marshall Plan – one of the most successful aid programs during the post World War II era. Between 1948 and 1952, 15 European countries received more than \$13 billion from the US under the Marshall Plan. Majority of these countries were small, and the bulk of the aid money went to rebuilt both non-tradable (e.g., infrastructure) and tradable (e.g. industries) sectors. Within the non-tradable sector, aid money went to both export and import competing activities. None of these countries are known to have suffered from a transfer paradox.

From the point of view of current debate on aid to combat HIV/AIDS it is worth pointing out that a substantial amount of the Marshall Plan money was used to purchase medicine to combat tuberculosis. The Marshall Plan aid is equivalent to nearly \$100 billion in 2005, when adjusted for inflation

<sup>\*</sup>The Yano-Nugent model is related to Harry Johnson (1967), who demonstrated that in a tariff-distorted economy, economic growth can result in a welfare loss. Johnson’s result was based on

### **Limitations of the Dutch Disease Model**

The propositions of the Dutch disease model are not straightforward. It suffers from a number of limitations. First, the original Dutch disease model does not consider the possibility of sterilising monetary policy in the face of an *excessive* over-valuation of domestic currency. As

noted earlier, the central bank can sterilise the monetary impact of FA in a number of ways, such as selling its holding of government bonds, raising the reserve requirement and bringing government deposits from commercial banks to the central bank. One may point out the limited scope for sterilisation given the underdeveloped nature of capital market in low-income countries. However, according to a recent work at the IMF (Prati *et al*, 2005), the practice of sterilisation is widespread among aid-receiving countries. Over the period 1960-1998, the study found 704 episodes – out of 1935 episodes of foreign aid inflows greater than 2% of GDP – during which net domestic monetary assets of the central bank fell. The study also reports the more recent experiences of Uganda, Tanzania, Mozambique, Ghana and Ethiopia, which have reduced net domestic monetary assets in response to surges in aid flows.

The central bank can further neutralise the impact of increased flow of FA by reducing the size of the money multiplier ( $m$ ) by influencing reserve ( $R$ ) and/or influencing private sector's behaviour with regard to currency holdings and deposits ( $c = C/D$ ). For example, by lowering the interest rate, the central bank can encourage commercial banks to keep excess reserves and the individuals to keep more cash rather than deposits. This will simultaneously increase reserve-deposit ratio ( $q$ ) and currency-deposit ratio ( $c$ ), which, in turn, will lower the size of the money multiplier.

The government can also shift its deposits from the central bank to commercial banks and vice-versa to influence  $g (= GD/D)$  and hence the money multiplier.

Thus, the central bank and the government can minimise the likely harmful effects of increased aid flows on money supply and hence on inflation and real exchange rate. However, as will be explained later, full sterilisation that leaves the real exchange rate unchanged is not desirable. The central banks of the aid recipient countries have to accept some real appreciation to effect real resource transfer. Sterilisation policy is pursued only when there are signs of *excessive* over-valuation of the domestic currency.

The government can choose to keep foreign aid in an overseas account instead of depositing into the central bank, to be used for imports. Under this arrangement, the private importers buy foreign currencies from the government, which then settles the transactions on behalf of importers from its overseas foreign aid account. If the private importers borrow from their banks to pay the government, the banks simply credit that to the government accounts held at

the commercial banks. This leaves the banks' balance sheet unchanged and hence there will be no impact on the domestic money supply. Thus, this arrangement is similar to the direct transfer of resources via commodity aid, which can be absorbed without real appreciation. However, the government has to ensure that the aid money is used to import *non-competitive* imports. That is, aid financed imports must not substitute goods and services that would otherwise have been imported or produced locally. This will ensure that real resources are transferred without real appreciation.

An added advantage of this arrangement is that the government can effectively follow a managed float exchange rate system to avoid *excessive* real appreciation of domestic currency. That is, it can choose at what nominal exchange rate it wants to sell foreign currencies to private importers, keeping an eye on the movement of real exchange rate.

One of the glaring omissions of the Dutch disease model is the supply-side effect of increased FA. It implicitly assumes that the supply in the NT sector is sluggish which drives up the price of NT in response to increased demand. The model also assumes that the economy is characterised with full-employment, which requires resources to transfer from the tradable sector so that both sectors cannot grow together. It also ignores the productivity-enhancing role of infrastructure, education and health (which are part of the NT sector). The Dutch disease model also assumes that "learning-by-doing" (LBD) occurs only in the tradable sector.

These assumptions are at odds with the experience of most developing countries where a vast army of underemployed and unemployed do not find jobs even when they are ready to work at a lower real wage. (See Nkusu, 2004). A large number of empirical works finds positive impact of public infrastructure investment, education and improved health conditions on productivity growth. (See, e.g., Adam and Bevan, 2004; Calderon and Serven, 2003; Gupta, *et al*, 2004; Barro and Sala-I-Martin, 1995; Krueger and Lindahl, 2004 and Canning and Bloom, 2003). Furthermore, there is no reason why LBD or other kind of externalities cannot occur in the non-tradable sector.

One also needs to consider the impact of foreign aid on money demand. The inflationary impact of increased FA flows depends on money supply growth exceeding the growth rate of real GDP. As the economy grows, so does the demand for money needed to facilitate the

increased transactions needs. As noted by Little *et al* (1993), the typical developing country has a rapidly growing demand for money, as the economy becomes more monetised and as households and firms increasingly hold assets in financial forms such as currency, demand accounts, or savings accounts. This means that the income elasticity of demand for money is likely to be greater than unity in low-income countries. Therefore, if we allow for the growth enhancing effects of aid-financed public investment, then the economy can accommodate a larger increase in money supply without generating significant inflationary pressure.

Therefore, the alleged inflationary impact and real appreciation effect of increased FA that cause the so-called Dutch disease is not a foregone conclusion. It all depends on how the monetary authority manages its assets and liabilities and uses its interest rate policy, and the supply side response to fiscal expansion. In a recent IMF working paper, Gupta *et al* (2005, p. 13), concluded:

*“The macroeconomic impact of aid is likely to depend on how the aid is used. If aid is used to boost supply capacity, its macroeconomic consequences are likely to be mitigated... Once appropriate consideration is taken of the supply-side impact of aid flows, there is no clear presumption as to whether, over the medium term, there will be a real exchange rate appreciation or depreciation or whether the tradable sector will contract or expand. This is essentially an empirical issue, on which individual country circumstances are likely to differ”.* (Emphasis original).

### **Evidence of Dutch Disease**

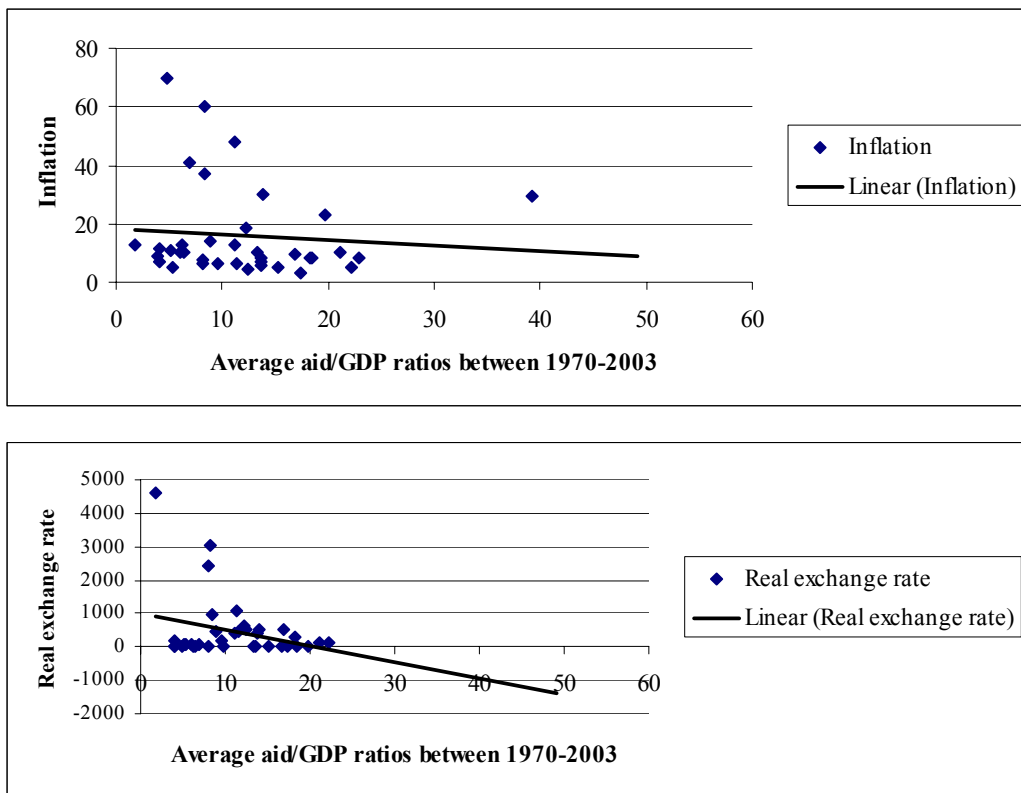
Unfortunately, “... there are remarkably few empirical studies of Dutch disease in aid-receiving countries” (Prati *et al*, 2005, p. 32). Figure 3 presents scatter plots of average *net* aid/GDP ratios vis-à-vis inflation and real exchange rates of 42 aid dependent countries for the period 1970-2003. The range of *net* aid dependence varies from 4% to 49% of GDP.<sup>18</sup> To calculate real exchange rate, we have used nominal US\$ exchange rate of domestic currency and taken the US CPI as a proxy for foreign price. Thus the real exchange rate is defined as  $RER = eUSCPI / \text{Domestic CPI}$ , where  $e$  is the local currency value of one US\$, so that a rise in real exchange rate indicates a real depreciation of the domestic currency.

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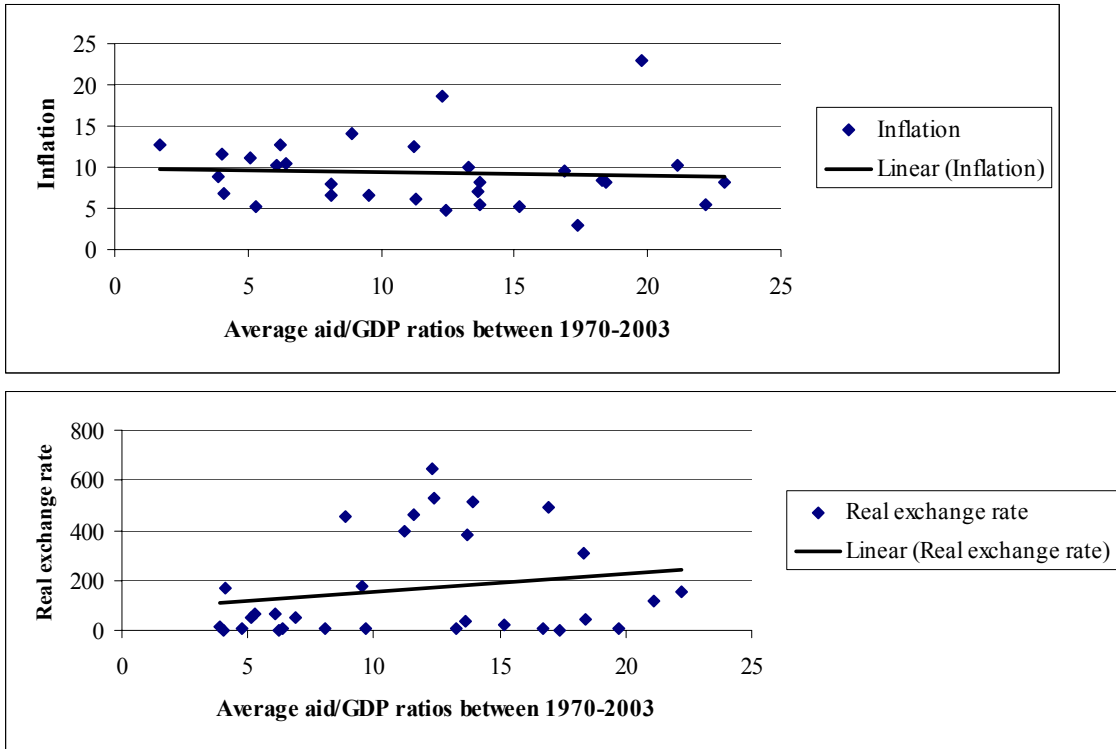
<sup>18</sup> One can use alternative measures of aid dependence, such as aid/government revenue or aid/government expenditure. Net aid is a capital flow concept and is net of principal payments. However, a better indicator is net aid transfers (NAT) which is net of both principal and interests, and excludes debt cancellations. Recently the Center for Global Development has produced a data set of NAT. See, <http://www.cgdev.org/doc/data%20sets/roodman05/NAT.xls>.

Contrary to the Dutch disease hypothesis, the relationship between inflation and net aid is clearly negative, even without outliers (inflation rates >30% and net aid/GDP > 30%). Although the relationship between net aid and real exchange rates is negative, implying that a rise in net aid inflows leads to real appreciations, when outliers (real exchange rate > 700 and net aid/GDP > 30%) are omitted, it becomes mildly positive. That is, in the absence of exceptionally high inflows of net aid, the real exchange rate is likely to depreciate. In sum, the cross-country evidence of Dutch disease is influenced by outliers.

**Figure 3A: Aid/GDP Ratios, Inflation and Real Exchange Rates (Average 1970-2003)**



**Figure 3B: Aid/GDP Ratios, Inflation and Real Exchange Rates  
(Average 1970-2003) without Outliers (inflation > 30%, Real exchange rate > 700)**



Source: IFS/IMF and IDS/OECD online database

Table 2 presents correlation coefficients of net aid/GDP ratios with inflation rates and real exchange rates of 13 African countries, including the nine countries which recently experienced a surge in HIV/AIDS related aid inflows. In eight countries, the association between net aid inflows and real exchange rates is positive, implying a real depreciation. In the remaining five countries there is weak evidence of real appreciation. The correlation between net aid inflows and inflation rates is in most cases is found to be positive. Therefore, it is not possible to say *a priori* whether a rise in net aid inflows would lead to real appreciation or high inflation. As will be shown later, the macroeconomic impact of aid inflows depends on the way the government and the central bank respond with their public investment, credit and reserve management policies.

**Table 2: Correlation Coefficients between Net Aid/GDP ratios and Selected Macroeconomic Indicators**

Countries	Real Exchange Rate	Inflation	Budget Deficit
Ghana (1970-1997)	0.79	-0.32	0.73
Chad (1983-2002)	-0.48	-0.07	-0.23
Burundi (1970-2003)	0.76	0.13	-0.46
Rwanda (1970-2003)	0.13	-0.01	0.04
Uganda (1980-2003)	0.69	-0.51	-0.32
Ethiopia (1970-2002)	0.36	-0.13	-0.28
Kenya (1970-2003)	0.45	0.68	-0.27
Lesotho (1973-2003)	-0.30	0.28	-0.30
Malawi (1980-2003)	0.42	0.39	
Mozambique (1986-2003)	-0.09	0.66	
Swaziland (1970-2003)	-0.48	0.55	-0.14
Tanzania (1970-2003)	0.72	0.45	0.30
Zambia (1970-2003)	-0.08	-0.05	0.36

Sources: IDS (OECD) and IFS (IMF) online data base

Notes: Budget deficit % of GDP

Real exchange rate is estimated as (Nominal exchange rate\* US CPI)/Domestic price.

US CPI is taken as a proxy for foreign price in each country. Nominal exchange rate is expressed as the price of one US\$ in domestic currency. So, a rise in real exchange rate means a real depreciation.

Our above evidence is roughly in line with the observation of Lewis (2005, p. 9), “the available evidence on the macroeconomic effects of large aid flows is somewhat ambiguous. The evidence base is modest, and country circumstances appear to play a major role in determining the impacts.”

The recent IMF survey of empirical findings on Dutch disease in Africa by Gupta et al (2005) also concur. Here we summarise the findings:

“... this evidence is not overwhelmingly significant. Econometric estimates often show the impact of aid on the exchange rate to be small and statistically insignificant. ... Time series models tend to reveal that the real exchange rate responds less to aid variations than to other exogenous factors, such as terms of trade variations. Moreover, some studies of African countries find that aid inflows appear to be associated with a real depreciation, reflecting increased productivity (supply-side response) as a result of aid” (p. 14).

*“To the extent that higher aid flows alleviate supply bottlenecks, they can offset the effect of an exchange rate appreciation on export growth”* (p. 15, emphasis original)

*“When aid flows build up public infrastructure and thus augment the productivity of private factors, it is possible to realize significant medium-term welfare gains from aid, even in the presence of some short-term Dutch disease”* (p. 16, emphasis original)

In sum, the theoretical literature on Dutch disease ignores an important fact that foreign aid is channelled mainly through the government of the recipient country. It comes to support the government’s budgetary position. In least developed countries, investment needs are very high; but is constrained by either low private savings or low public investment.<sup>19</sup> The governments are forced to run deficits as the revenue base is narrow and the tax administration is weak. However, the low private savings and/or the thinness of the domestic capital market limit governments’ ability to borrow domestically. At the same time, developing countries cannot borrow internationally at reasonable interest rates due to their poor credit ratings.<sup>20</sup>

Thus, foreign aid remains the only source of deficit financing needed to maintain a high enough public investment level to generate economic growth for poverty reduction. In the absence of foreign aid, the governments of developing countries will have no option, but to borrow from their central banks (or print money) to finance the investment needs. In other words, foreign aid allows the recipient government to pursue an expansionary fiscal policy without causing inflationary pressures through monetary expansion.

Even when developing countries are able to raise domestic savings, they can find themselves in a situation where they cannot use it for investment due to shortages of critical imports for lack of foreign exchange. As a result, they suffer from Keynesian type unemployment (or underemployment) despite the fact that real wages in most cases are very low, and often are

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<sup>19</sup> Real savings may not be low; but the amount mediated through the financial institutions or capital market is low compared to the investment needs.

<sup>20</sup> A typical developing country finances approximately 50% of budget deficits through the banking system (Little *et al.*, 1993). Easterly and Schmidt-Hebbel (1993: 221) estimated a seigniorage of about 2% of GNP for a sample of 35 developing countries as opposed to 1% for a sample of 15 developed countries. Thus, in developing countries, monetary policy becomes an instrument for fiscal authorities. Taylor (1979: 27) puts it succinctly: ‘The Bank has to “print” money by absorbing government obligations if the Finance Minister orders it to do so ...’. For more details on the link between budget deficits and money supply in developing countries, see Hossain and Chowdhury (1996).

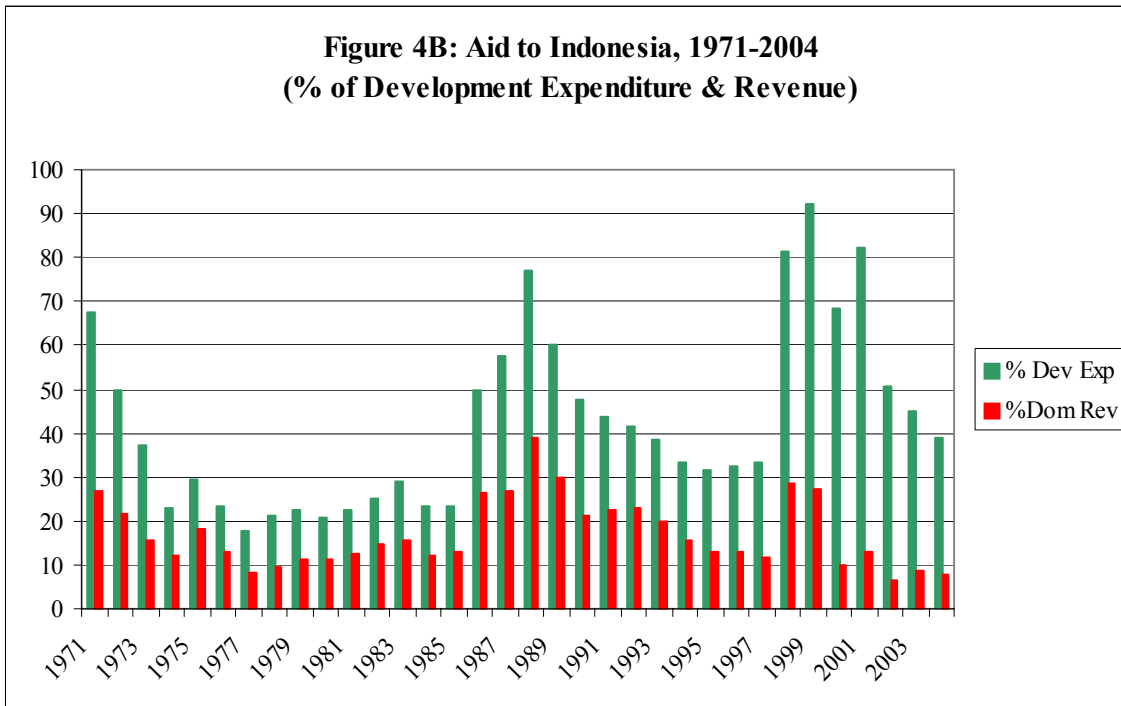
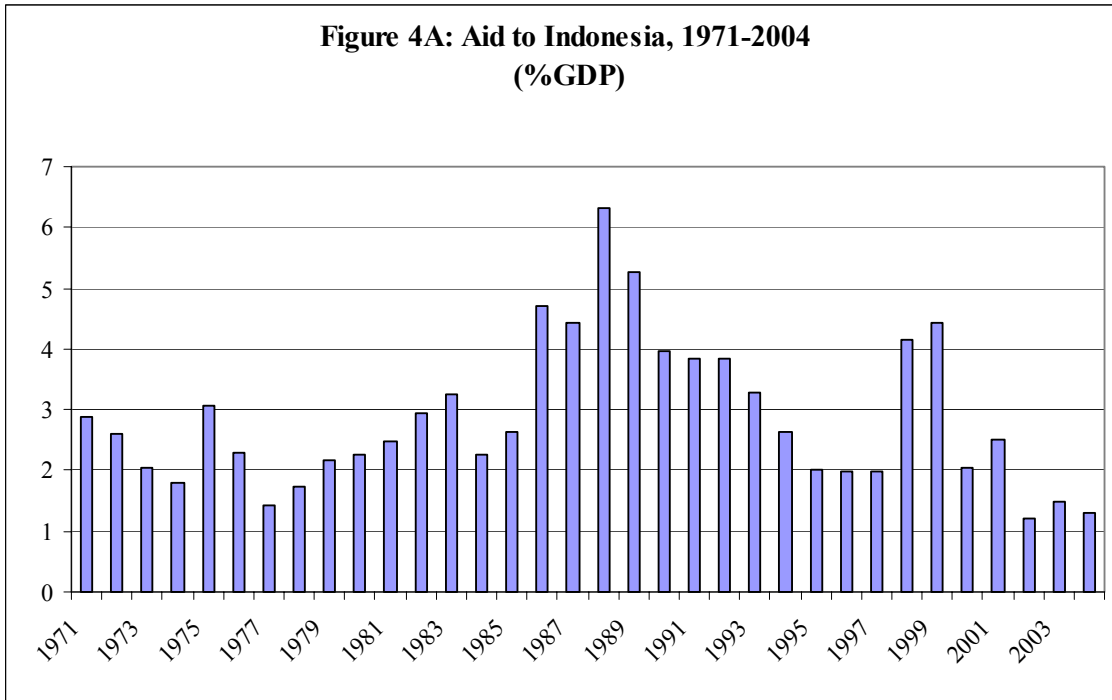
below the poverty line. The unemployment/underemployment problems in these countries cannot be attributed to the downward inflexibility of real wages. Further cuts in real wages will simply swell the pool of working poor. In such circumstances, foreign aid facilitates imports that arise with increased investment needed to create productive employment.

### The Indonesian Experience

Foreign economic assistance is believed to have played a crucial role in Indonesia's phenomenal transformation since the early 1970s. As can be seen from Figure 4, foreign aid to Indonesia rose steadily from about 3% of GDP in 1971 and peaked at about 6.5% of GDP in 1988. Foreign aid financed nearly 70% of total development expenditure in 1971, dropping to about 22% in 1974. It fluctuated between 20 and 30% during the period 1975 – 1985. The contribution of foreign aid to development expenditure rose to about 78% in 1988 and peaked to over 90% during 1998-2000 in the aftermath of the financial crisis.<sup>21</sup>

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<sup>21</sup> Nearly 80% of development budget of 1969/70 fiscal year was financed through foreign aid. See Hill (1996, Figure 4.3, p. 46).

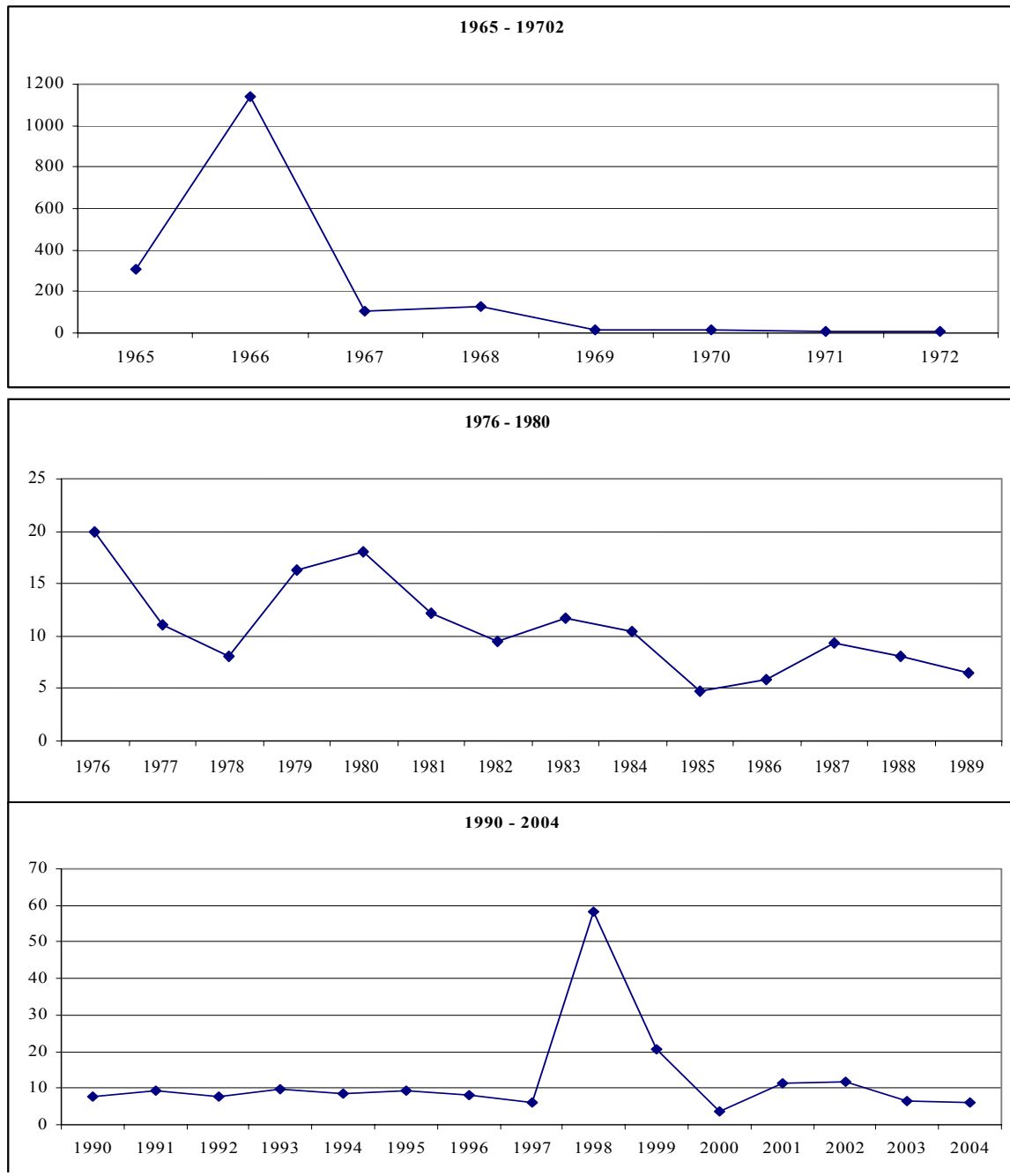


Sources: Financial Memorandum (Nota Keuangan), Ministry of Finance (MOF), various years. The data exclude capital transaction with the IMF

The relevant issue here is whether the surge in aid inflows in the late 1960s and early 1970s and later during the late 1980s and 1998-2001 resulted in macroeconomic instability. Contrary to the prediction of the aid-induced Dutch disease hypothesis, the inflation rate

declined remarkably during these periods (Figure 5). As a matter of fact, aid has been a crucial factor that helped Indonesia stabilise its macroeconomy.

**Figure 5: Indonesia's Inflation Stabilisation, 1965-2004**



Source: IFS online database

Aid helped avoid inflationary financing of budget deficits. The runaway inflation during the mid 1960s was successfully controlled in just a few years. Indonesia's average inflation rate in 1970s was about 10%, which dropped to around 6% in the 1980s. This is indeed the most noteworthy success story of aid in Indonesia. By carefully following a managed exchange rate system, Indonesia was also able to avoid the adverse impact of aid financing on the private sector due to a real exchange rate appreciation.<sup>22</sup> This helped Indonesia's rapid export-led industrialisation as the share of manufacturing in total exports increased from 1-3% during the 1970s to around 28% in 1988 when aid-GDP ratio peaked at 6.5%.

One of the measures that the Soeharto Government took immediately after taking over was to legislate the "balanced budget principle" and prohibit the state from borrowing from Bank Indonesia (BI). This measure quickly stabilised the economy, which paved the way for three decades of sustained economic growth. The poverty rate dropped from nearly 60% in the late 1960s to about 11% prior to the massive economic collapse in 1997-98 triggered by the Asian financial crisis.

How was it possible to adhere to the balanced budget principle? A careful examination of the state budget of the Soeharto period reveals that it was never balanced in the true sense. The trick of a balanced budget was mainly the inflow of foreign aid. Because of the strategic importance of Indonesia in the specific context of the Vietnam War, and generally, the Cold War, the donor countries treated the Soeharto regime very favourably. This meant they underwrote Indonesia's budget deficit. Because of this "implicit guarantee" foreign aid was treated as revenue contrary to conventional accounting principle; thus yielding a balanced budget.

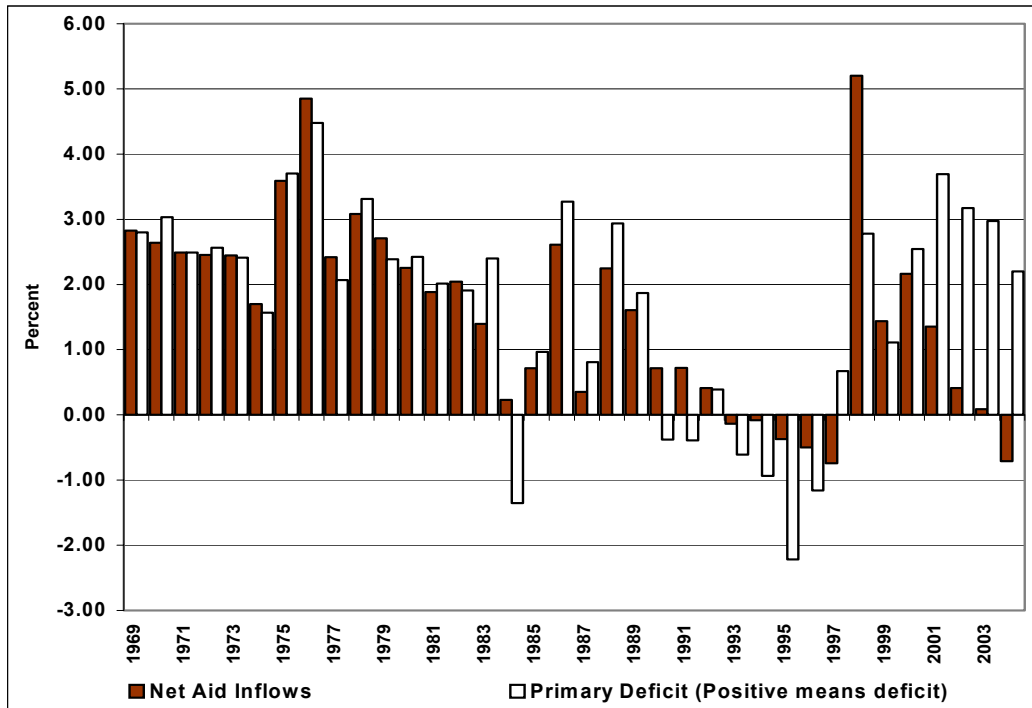
As can be seen from Figure 6, aid flows almost mirrored the size of government budget deficits, except in few years. The fact that there is a strong correlation between aid flows and budget deficits opens up two possibilities. First, aid may have been demand driven. That is,

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<sup>22</sup> See, Gray and Woo (2000). Indonesia devalued its currency significantly in 1978, 1983 and 1986 to avoid real appreciation. The Rupiah was devalued by 50% in November 1978. It was devalued again in March 1983 following the second oil price boom in order to avoid the Dutch disease syndrome. There was further devaluation in September 1986 in response to balance of payments deficits due to the expansionary fiscal policy. These three large devaluations were seen as highly destabilising that caused uncertainty for business. Thus, the Bank Indonesia (BI) adopted a managed float policy since the devaluation of 1986. The Rupiah was allowed to gradually depreciate for much of the period since then. This strategy was modified in the early 1990s to incorporate movements against a basket of currencies.

the government intentionally created deficits due to various reasons and then sought to fill the deficits with aid. Second, aid could have been supply driven and therefore induced deficits. The latter case represents donors' interests more than the debtor interests.

**Figure 6: Aid and Budget Deficit (% of GDP, Indonesia)**



Source: *Financial Memorandum* (Nota Keuangan), Ministry of Finance (MOF), various years. The data exclude capital transaction with the IMF

In order to assess whether net aid inflow to Indonesia was driven by the necessity to fill the fiscal gap, the “Granger causality test” is employed.<sup>23</sup> The test suggests that budget deficits caused net aid flows which indicates that the size of the deficits determined the size of net aid inflows (Table 3). In other words, the government planned the deficit in the first place, and

<sup>23</sup> See Sugema and Chowdhury (2004), for details.

then negotiated with creditors to fill the intended deficit. Indonesia being a strategic ally in the Cold War, the donors obliged with Indonesia's request.<sup>24</sup>

**Table 3: The Results of Causality Test (1970-2001)**

Causality		Test Statistics	Prob (df=5, sl=0.05)
From	To		
Net Aid Flows	Budget Deficit	5.441	0.367
Budget Deficit	Net Aid Flows	11.735	0.047

The Granger causality test was also used to assess whether there was a reverse causality between fiscal deficits and aid flows. The test shows that net aid flows did not cause fiscal deficits, and therefore there was no strong evidence that aid was supply driven. But this does not mean that creditors had no interest in directing aid to certain activities that meet their objectives in providing loans. Rather, it says that aid was made available upon demand (request) by the government of Indonesia. Importantly, the lack of evidence to support the Granger causality from aid to budget deficit implies that the *implicit* aid guarantee did not create disincentives for domestic revenue mobilisation, and nor did it encourage government profligacy.

In crisis situations, aid played a very significant role in preserving fiscal sustainability and sustaining growth. For example, when the economy went into a down turn in the mid-1980s, aid flows peaked to 6.5% of GDP in 1988 and financed 78% of development budget. As the tax revenue fell during the economic slow down, aid represented close to 40% of domestic revenue. Similarly, aid flows helped Indonesia ride over the more recent economic crisis of the late 1990s. During 1998 and 2001, over 80% of development expenditure was financed through foreign aid. Thus, the government could maintain essential social services and development expenditure without resorting to inflationary financing (through borrowing from the Bank Indonesia). This also helped reining in the inflation rate from nearly 70%, immediately following the crisis in 1998 to a single digit level in 1999. However, many have criticised the cuts in government social expenditure replaced with donor support. (More on this later).

<sup>24</sup> For example, Indonesia received World Bank's Structural Adjustment loan in 1987 without any condition. The relationship between Indonesia and donors soured only after the Asian financial crisis. See Hill (1996) for donor attitudes towards the Soeharto Government.

In sum, the stability of ODA flows allowed the government to plan its development expenditure and execute it. Hill (1996, pp 79-80) has summarised the contribution of ODA in the following words:

The stability of foreign aid flows, in contrast to volatility of private flows,... has been a recurring feature of the New Order... The stability of official flows underlies a crucial contribution of foreign aid... In a close relationship with donors, aid flows are more consistent, they provide a basis on which governments may plan longer-term investment projects and they enable nations to endure difficult economic periods and to enact policy reforms less painfully than would be the case in the absence.

What is relevant for the HIV/AIDS related human development crisis, is that foreign aid can play a critical role. However, there should be a certainty in the flow of foreign aid in order to enable the government to plan and implement HIV/AIDS programs on a sustained basis without risking its fiscal position.

#### **IV. A Macroeconomic Framework for Analysing Aid Utilisation**

We cannot find a clear-cut relationship between aid inflows and macroeconomic developments. The Indonesian experience shows that the macroeconomic impact of aid depends critically on the policy response to aid. In particular, it depends on how the government uses the aid money; if aid money is used to expand the productive capacity of the economy or to remove critical supply bottlenecks then there will be no adverse impact due to Dutch disease like problems. In the case of Indonesia, the surge in aid inflows went to finance over 80%-90% of development expenditure. The macroeconomic impact of aid also depends on the behaviour of the central bank. The central bank can use the aid induced increase in reserve to expand low cost credit to the private sector so that they can take advantage of government's supply-enhancing fiscal programs. For example, Indonesia used the increased flows of foreign exchange (whether due to oil boom or to increased aid inflows) to expand low cost credit schemes for rural and small-scale industries.<sup>25</sup> The experience of Indonesia also reveals that the central bank can successfully manage the exchange rate to offset any appreciating effect of foreign exchange accumulation. In short, the effectiveness of aid flows depends on the fiscal-monetary and exchange rate policy response of the government and the central bank.

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<sup>25</sup> Before the crisis, Indonesian banks were required to lend 20% of their loans to SMEs. The main financial institution for financing SMEs and the rural sector is the Bank Rakyat Indonesia (BRI).

A recent IMF working paper (IMF, 2005) provides a useful macroeconomic framework for analysing the use of foreign aid.<sup>26</sup> It defines two related concepts – absorption and spending. Absorption captures both direct and indirect increase in imports financed by aid, and shows how much additional imports are possible due to the availability of aid.<sup>27</sup> Similarly, spending refers to additional government spending that aid allows. In other words, these two terms capture the way aid helps widen the foreign exchange (trade) gap and the savings (government deficit) gap.

Thus, absorption and spending are defined as:

$$\text{Absorption} = \Delta(\text{current account deficit without aid})/\Delta\text{Aid}$$

$$\text{Spending} = \Delta(\text{budget deficit without aid})/\Delta\text{Aid}$$

Where  $\Delta$  denotes change. The current account balance/deficit here excludes official grants and interest on external public debt and the budget deficit equals total government expenditure less domestic revenue when no aid is available.<sup>28</sup>

Theoretically speaking, from the balance of payments side, an *increase* in aid can be utilised (absorbed) in some combination of (a) an increase in the rate of reserve accumulation, (b) an increase in capital outflows, (c) an increase in current account deficit. However, not all of the options will allow effective absorption of aid. For example, option (b) amounts to no real transfer of resources – foreign exchange comes and goes without adding any new capacity in the country. Similarly, if the central bank decides to use the entire additional aid flows to boost its reserves of foreign currencies then none of the extra aid gets absorbed. The central bank can do this by shedding other components of its financial assets – in this case selling its holding of government bonds – so that its overall financial assets remain unchanged. The selling of government bonds pushes up the interest rate on government bonds and with it the overall interest rates. Thus, such action is tantamount to following a restrictive monetary policy regime in response to increased aid flows.

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<sup>26</sup> For a summary of the framework, see McKinley (2005).

<sup>27</sup> Absorption, here, is used differently from the term absorption capacity. See footnote 5.

<sup>28</sup> In the absence of aid, current account and fiscal deficits can be financed by borrowing externally.

*Therefore for the effective absorption of additional aid, the central bank should respond with an expansionary policy stance – option (c) above. The lower interest rate induces domestic demand and hence the trade deficit widens. The central bank then should use its foreign reserves to finance the trade gap.*

In theory, from the fiscal side (i.e., the savings-investment gap), an *increase* in aid can be utilised (spent) in some combination of (a) an increase in government expenditures, (b) a reduction in taxation revenue and (c) retire existing government debt of fund projects which would have been financed from the domestic sources. Option (b) is not a viable option. The whole idea of providing aid is to allow the government to spend more than what is possible with its own resources. The substitution of tax revenue with aid revenue leaves the government budget deficit unchanged and hence no new initiative or spending takes place. Moreover, when aid substitutes domestic revenue, fiscal sustainability becomes vulnerable to aid volatility. Likewise, option (c) is also not desirable. If the new aid money finances a project (or used to service debt), which was supposed to be financed from domestic sources then the overall government spending remains unchanged.

Therefore, the government must not use increased aid flow to reduce its tax efforts; nor should it use the new aid money to finance a project (or to service debt), which is supposed to be financed from the domestic source. *Instead, the government should use the aid money to remove bottlenecks in the economy and thereby increase economy's productive and absorptive capacity.*

Indonesia's recent experience in the aftermath of the economic crisis in 1997-98 offers an interesting example of a case where foreign assistance did not get fully absorbed or spent. The large inflow of IMF money following the economic crisis was not intended to support government budget; instead the loan was given as a supplementary fund to be used if Bank Indonesia's foreign exchange reserves fell short of meeting the balance of payments needs. That is, the IMF money was used to boost foreign exchange reserves. In reality, Indonesia never needed to use the IMF fund. However, it still ended up bearing the cost. For example, in 2002 Indonesia paid USD2.3 billion to the IMF, consisting of USD1.8 billion in principal and USD500 million in interest payments (Ramli 2002, p. 13). On average the service charge (fees and interest) for this *idle* fund was about 3.5%. This was at a time when both the business community and the national planning board (BAPPENAS) were asking for

expansionary monetary and lower interest rate policies.<sup>29</sup> Instead, Bank Indonesia (BI) followed restrictive policy as it tried to adhere to the medium term inflation target of 3% - 5%. This improved the balance of payments by import compression due to subdued economic recovery. Thus, although the large foreign aid that followed the economic crisis stabilised, the exchange rate, contrary to the general expectations, did not aid economic recovery as BI accumulated reserves.

On the fiscal side, the government did not use large aid inflows from the World Bank, the ADB and bilateral donors to boost its expenditure. Instead, the government was using domestic revenue to service debt while the increased foreign aid flows were financing social and development spending, with no or little net increase in overall government spending. The government deficit was less than 2% at a time when the unemployment rate was quite high and nearly half the population remained vulnerable to poverty.<sup>30</sup>

Thus, the combination of Indonesia's restrictive monetary and fiscal policy went against the spirit of foreign aid. Similarly, the IMF (2005) study of five African countries (Ethiopia, Ghana, Mozambique, Tanzania and Uganda) found that the ideal textbook response did not happen in any of these countries. In Ethiopia and Ghana both absorption and spending were very low. While Ethiopia accumulated reserves to bolster the exchange rate peg against the dollar, in Ghana, a buffer against extremely volatile aid inflows was built. In the other three countries, spending exceeded absorption, indicating that there was a lack of coordination between fiscal and monetary policies.

Ideally, an increased inflow of foreign aid should enable a country to adopt a more expansionary fiscal policy stance. The central bank must accommodate the absorption of aid through its decision about the rate of reserve accumulation and through its interest rate policy that influences private spending decisions and hence import needs. The central bank and the

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<sup>29</sup> The National Planning Agency (BAPPENAS 2001: 27) believed that a relaxed monetary policy setting can ease fiscal pressure, and concluded, "Monetary policy aimed at lower interest rates ... lower domestic debt servicing costs is now attractive for ... budgetary reasons... higher interest rates increase the interest cost on the large, outstanding stock of [debt] (currently equivalent to roughly 90% of base money). This significantly complicates the task of implementing monetary policy.

<sup>30</sup> Gross aid flows as a proportion of development expenditure increased dramatically from close to 40% in 1997 to nearly 120% in 2002. Yet more is spent on external debt servicing than on development. The ratio of external debt service (excluding the servicing of IMF loans) to development expenditure stood at 140% in 2002. If the servicing of IMF loans were taken into account, this figure would be much higher.

government have to accept some real appreciation of domestic currency to accommodate increased imports. Whether the real appreciation should happen through inflation or through nominal appreciation depends on a particular country situation.<sup>31</sup> In most cases, however, the real appreciation happens through a combination of nominal appreciation and inflation. More importantly, inflation should be kept at a moderate level and the exchange rate needs to be managed to prevent the possibility of *excessive* real appreciation. That is, in order to effectively utilise additional foreign aid without causing macroeconomic instability there should be a well co-ordinated expansionary fiscal and monetary policy stance coupled with a managed exchange rate policy.

Why do central banks and governments deviate from the ideal response to the increased aid flows? There are primarily two reasons. First, they are concerned with the uncertainty of aid commitments/disbursements. They do not want to get stuck with projects and expenditure which cannot be sustained if aid flows drop. Second, they fear inflation and real exchange rate appreciation. While the concerns with aid volatility are genuine, as the preceding survey shows, there is no basis for the fear of Dutch disease. A large body of empirical studies finds no adverse affect of moderate inflation in the range of 10-15% on economic growth.<sup>32</sup> We also find countries do not necessarily slip into unsustainable fiscal deficits; many countries (such as Malaysia, South Korea and Thailand) lived with a fiscal deficit of around 5-6% for a long period and successfully used fiscal deficits to maintain domestic demand at times of declines in external demand.<sup>33</sup>

Donors also have the responsibility of ensuring sufficient predictability in the flow of aid resources. At the same time, they must adopt a more flexible attitude towards inflation and budget deficits and work with recipient countries to ensure that resources are allocated within the context of a country's long-term development strategy so that the possibility of Dutch disease does not arise. The challenge in a scaled-up aid environment is to ensure that increased availability of resources is used to increase productivity.

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<sup>31</sup> See Younger (1992) for the analysis of Ghana's macroeconomic management in the 1980s following a surge in aid inflows.

<sup>32</sup> See Chowdhury (2005) for a survey. "Poverty Reduction and the "Stabilisation Trap" – The Role of Monetary Policy

<sup>33</sup> More importantly fear should not dominate public policy decisions. It would be pertinent at this juncture to paraphrase Bob Hawke, the former Australian Prime Minister that policy makers cannot be too scared to put a foot forward for fear of putting a wrong foot.

Finally, both donors and recipient countries should have a clear exit strategy. The country must use the breathing space and growth momentum due to increased aid flows to broaden its tax base and strengthen its governance and institutions.

## **V. Policy Options with regard to Scaled-up HIV/AIDS related Foreign Aid**

As the preceding discussion shows, the option of neither spending nor absorbing aid is not viable, especially when dealing with the human development disaster. This option defeats the purpose of scaling up of aid, meant for tackling HIV/AIDS. Given the urgency of the issue and the scarcity of domestic resources, the ideal policy option is “absorb and spend”. That is, the recipients of GFATM and other aid related international assistance (such as PEPFAR) should adopt a more expansionary and monetary policies in order to be able to have effective HIV/AIDS programs. The possibility of *excessive* real appreciation due to expansionary fiscal-monetary policies can be avoided by carefully managing the exchange rate, and the effect of real appreciation on exports can be mitigated by targeted export subsidies linked to productivity enhancing measures.

Therefore, the general principle that should guide the use of HIV/AIDS related foreign aid is an expansionary fiscal and monetary policy stance, coupled with a managed exchange rate regime. Specifically, the funds from the international community can be used to:

- 1) fund direct imports of drugs and equipment which are not domestically produced or would have been imported anyway, and
- 2) support national programs of treatment, care and prevention.

If aid fund is used to directly import equipments and medicines, aid gets simultaneously spent and absorbed. Such measures should not have any monetary implication, as the central bank does not issue equivalent domestic currency to the government for spending on programs. However, the government still needs to spend to enhance domestic capacity such as health clinics and trained healthcare personnel. In the absence of adequate capacity, the country cannot use aid-funded equipments. In most cases, building capacity would require financing from the central bank, at least in the short- to medium-term when tax base is low.

The borrowing from the central bank to finance deficit will inject liquidity in the economy, and hence there will be some inflationary impact due to supply lag.

When the fund comes as a budget support, it should not replace existing government programs financed from its own sources or reduce tax. Nor should the government use foreign aid to retire its debt. Therefore, whether foreign assistance for the HIV/AIDS programs comes as a direct transfer of resources or as a budget support, the receiving governments must be allowed to increase their spending. The increased aid supported spending on AIDS programs must not be matched by cuts in other social sectors, such as education, basic health and human security as these sectors have important complementarities with HIV/AIDS prevention and control.

Monetary policy needs to support the government's expenditure program. First, central bank should not sterilise the increase in its foreign exchange reserves (due to aid) by selling government bonds to the public. If it sterilises then the overall expenditure level in the economy does not rise – only the private-public mix changes, and hence aid does not get spent in real sense. Therefore, the central bank should use the additional reserves to develop specialised low cost credit programs for the HIV prone regions to facilitate employment and income generation. As a matter of fact, HIV/AIDS program should be integrated with poverty reduction strategies as HIV/AIDS is not only directly responsible for poverty, poverty itself contributes to the spread of HIV/AIDS as people are forced to prostitutions.

Second, the additional aid money must not be used to boost central bank's foreign exchange reserves. Instead, it should sell foreign exchange to the private sector to facilitate increased import demand due to the multiplier effects of government expenditure. *After all aid is meant to facilitate financing of larger trade deficits.* Additionally, while this act facilitates the absorption of aid, it will partly neutralise the initial increase in liquidity and dampen the inflationary impact.

The governments and central banks can be persuaded to follow a coordinated expansionary and monetary policy stance if they can be assured that aid flows will be steady and will not stop suddenly. The governments also need to be convinced that when aid flows do slow, they can sustain the programs from domestic financing sources. For this, there should be sustained efforts at broadening the tax base and strengthening of tax administration. The countries

might need to slow down liberalising tariffs which contribute significantly to government revenue.

For enabling the central bank to manage the exchange rate without building up foreign exchange reserves (as a precautionary measure against speculative attacks on the domestic currency), there must be some control on capital outflows. For most of the high AIDS prevalence countries capital inflow is not significant. Instead they face the problem of capital outflows. The central bank needs to take measures to prevent outflows of foreign currencies through over-invoicing and other means of capital transfers. Perhaps the new international efforts at preventing money laundering can be extended to cover this kind of capital flights as well.

Only when a country has a high inflation (say in excess of 15% - 20%) and/or high government debt, it can choose to “absorb but not spend” aid as a short-term measure in order not to create further demand pressure and/or increase debt unsustainability. Likewise, when a country has a very low foreign exchange reserves and/or fears a sudden drop in aid flows, it can temporarily choose to “spend but not absorb” aid to build up its reserves.

While the above are general principles to be followed, the country-specific policies will vary according to their own circumstances. Each country will need to determine:

- (a) the threshold level of inflation and fiscal sustainability to provide the limits of expansionary policy stance;
- (b) the process of inflation – demand pull or cost push to avoid inflationary spiral and wrong policy response;
- (c) income elasticity of demand for money to determine the limits of non-inflationary increase in money supply;
- (d) factors in international competitiveness to balance with the exchange rate effect;
- (e) sectoral employment elasticities and productivity for directing public investment.

## VI. Concluding Remarks

This paper surveyed the possibility of macroeconomic instability due to large foreign aid inflows. If the surge in aid flows cause high inflation and/or *excessive* real appreciation of domestic currency, which can adversely affect growth and international competitiveness then aid can paradoxically be immiserising. This is particularly important for the countries facing both human development crisis and a bleak economic prospect due to high HIV/AIDS prevalence. If the large aid inflows intended for HIV/AIDS prevention and treatment programs cause growth immiserisation through high inflation and/or *excessive* real appreciation then it seems that these countries face a “no-win” situation – damn if they accept and spend large amounts of aid; damn if they don’t.

Fortunately, however, the situation on the ground is not as stark as it is in theory. The evidence of large aid induced high inflation and/or *excessive* real appreciation is far and few. This is mainly because governments and central banks can avoid possible harmful effects of large aid flows by carefully directing public expenditure and credits to productivity and employment enhancing sectors. Since the bulk of HIV/AIDS related aid will be spent abroad to buy drugs which are not produced domestically (non-competitive imports) or could not be imported without aid, it is unlikely that there would be a significant inflationary pressure or *excessive* real appreciation. Instead, there could be a moderating effect on the general price level as the increased supply of imported essential drugs keep their prices down.

More importantly, increased spending on the prevention and treatment of HIV/AIDS is likely to have favourable impacts on economic growth through its positive impacts on human capital formation. Effective universal programs of treatment and prevention of HIV/AIDS can significantly enhance human capital by reducing the adverse effects of premature mortality from the disease, allowing a longer period of productive employment and freeing household members from caring infected ones in the family. As a matter of fact, dealing with HIV/AIDS emergencies first can generate a sufficiently high payoff in economic growth that might create higher fiscal space in the future for dealing with short-term macroeconomic problems that may arise due to large aid inflows (Heller, 2005).

For maximising the growth dividends of the HIV/AIDS prevention and treatment programs, they must be integrated with poverty reduction strategies. This is because there is a vicious

circle between poverty and HIV/AIDS. The idea is to break this vicious circle with a big push of aid.

Finally, there are donor-recipient mutual obligations. The donors must ensure certainty in aid flows so that the recipient governments can plan their programs, and their fiscal position do not become vulnerable to aid volatility. The recipient governments must not become complacent and lax in their domestic resource mobilisation efforts. That is, they must have a clear strategy to exit from aid dependence.

### References

Adam, C. and Bevan, D. (2002), “Uganda: Aid, Public Expenditure, and Dutch Disease” DFID-EA (Uganda).

Adam, C. and Bevan, D. (2004), “Aid and the Supply Side: Public Investment, Export Performance and Dutch Disease in Low Income Countries”, *Department of Economics Discussion Paper Series, University of Oxford*, August.

BAPPENAS (2001), *The Indonesian Economy in the Year 2001: Prospects and Policies*, Jakarta.

Bacha, I. (1990), “A Three-Gap Model of Foreign Transfers and the GDP Growth Rate in Developing Countries”, *Journal of Development Economics*, 32, pp. 279-296

Barro, R. (1989), *A Cross-Country Study of Growth, Saving and Government Expenditure*, Working paper #2855 (NBER, Cambridge, MA)

Barro, R. and Sala-i-Martin, X. (1995), *Economic Growth*, New York: McGraw-Hill.

Calderon, C. and Servén, L. (2003), “The Effects of Infrastructure Development on Growth and Income Distribution”, *World Bank Policy Research Working Paper*, No. 3400.

Chenery, H. and Bruno, M. (1962), “Development Alternatives in an Open Economy”, *Economic Journal*, 72(1), pp 79-103

Chenery, H. and Strout, A. (1966), “Foreign Assistance and Economic Development”, *American Economic Review*, 56(4), pp 679-733.

Choi, E. K. (2004), “Aid Allocation and the Transfer Paradox in Small Open Economies”, *International Review of Economics and Finance*, 13, pp 245- 51.

Chowdhury, A. “Poverty Reduction and the ‘Stabilisation Trap’ – The Role of Monetary Policy”, Thematic chapter prepared for the UNDP’s Regional Workshop on Macroeconomics of Poverty Reduction, Asia.

- Easterly, W. (2003), "Can Foreign Aid Buy Growth?", *Journal of Economic Perspective*, 17(3), pp 23-48.
- Easterly, W. and K. Schmidt-Hebbel (1993) "Fiscal Deficits and Macroeconomic Performance in Developing Countries". *World Bank Research Observer* 8(2): 211-239.
- Findlay, R. (1973), *International Trade and Development Theory*, New York: Columbia University Press
- Gomanee, K, Grima, S. and Morrissey, O. (2003), "Searching for Aid Threshold Effects", *CREDIT Research Paper*, September, University of Nottingham.
- Gupta, S., Clements, B., Baldacci, E. and Mulas-Granados, C. (2004), "Fiscal Policy, Expenditure Composition, and Growth in Low Income Countries", in S. Gupta et. Al (eds.), *Helping Countries Develop: The Role of Fiscal Policy*, Washington DC: IMF.
- Gupta, S., Powell, R. and Yang, Y.(2005), "Macroeconomic Challenges of Scaling Up Aid to Africa", *IMF Working Paper*, No. WP/05/179
- Gray, S. and Woo, D. (2000), "Reconsidering External Financing of Domestic Budget Deficits: Debunking Some Received Wisdom", *IMF Policy Discussion Paper*, PDP/00/8
- Haacker, M. (2004), *The Macroeconomics of HIV/AIDS*, Washington DC: IMF
- Heller, P. (2005), "Understanding Fiscal Space", *IMF Policy Development Paper* 05/4
- Heller, P. (2005a), "'Pity the Finance Minister': Issues in Managing a Substantial Scaling up of Aid Flows", *IMF Working Paper* No. WP/05/180
- Hill, H. (1996), *The Indonesian Economy Since 1996*, Melbourne: Cambridge University Press.
- Hossain, A. and A. Chowdhury (1996) *Monetary and Financial Policies in Developing Countries: Growth and Stabilisation*, London and New York: Routledge.
- IMF (2005), *The Macroeconomics of Managing Increased Aid Inflows: Experiences of Low-income Countries and Policy Implications*, IMF Policy Development & Review Department, August 8.
- Johnson, H. (1967) "The Possibility of Income Losses from Increased Efficiency or Factor Accumulation in the Presence of Tariffs", *Economic Journal*, 77(305), pp 151-154
- Kalecki, M. (1976), *Essays on Development Economics*, Brighton, Sussex: Harvester Press.
- Krueger, A. and Lindahl, M. (2004), "Education for Growth: Why and for Whom?", *Journal of Economic Literature*, 39 (Dec.), pp 1101-36
- Kwik, Kian Gie (2002), "Effective Use of Foreign Aid", statement to the Pre-CGI meeting, Jakarta, June 12.

Little, I., Cooper, R., Corden, W. M. and Rajapatirana, S.(1993), *Boom, Crisis and Adjustment: The Macroeconomic Experience of Developing Countries*, New York: Oxford University Press (for the World Bank).

Lewis, M. (2005), “Addressing the Challenges of HIV/AIDS: Macroeconomic, Fiscal and Institutional Issues”, *Center for Global Development Working Paper*, April

McGillivray, M. (2000), “Aid and Public Sector Fiscal Behaviour in Developing Countries”, *Review of Development Economics*, 4(2), pp 156-163

McGillivray, M. (2003), “Aid Effectiveness and Selectivity: Integrating Multiple Objectives into Aid Allocations”, *WIDER Discussion Paper* No. 2003/71.

McKinley, T. (2005), “Why is ‘The Dutch Disease’ Always a Disease?: The Macroeconomic Consequences of Scaling up ODA”, *UNDP Discussion Paper*.

Nkusu, M. (2004), “Aid and the Dutch Disease in Low Income Countries: Informed Diagnosis for Prudent Prognosis”, *IMF Working Paper* WP/04/49

Ouattara, B. and Strobl, E. (2004), “Foreign Aid Flows and the Real Exchange Rate in the CFA Franc Zone”, *CREDIT Research Paper* No. 04/07, University of Nottingham.

Prati, A., Sahay, R. and Tressel, T. (2005), “Can Monetary Policy Make Foreign Aid More Effective?”, IMF, February.

Ramli, Rizal, (2002). “Malpractice and IMF Myths in Indonesia”, Jakarta: (Mimeo)

Sugema, I. and Chowdhury, A. (2004), “Fiscal Response to Aid – The Case of Indonesia”, working paper, United Nations Support Facility for Indonesian Recovery, Jakarta.

Taylor, L. (1979) *Macro-Models for Developing Countries*, New York: McGraw-Hill.

Tendler, J. (1975), *Inside Aid*, Baltimore: John Hopkins University Press

Thirlwall, A.P. (2003), *Trade, the Balance of Payments and Exchange Rate Policy in Developing Countries*, Edward Elgar, UK and USA

UN (2005), *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals*, New York: UN.

UNAIDS (2005), *Resource Needs for an Expanded Response to HIV/AIDS in Low- and Middle-Income Countries*, Geneva: UNAIDS

van Wijnbergen, S. (1986), “Macroeconomic Aspects of the Effectiveness of Foreign Aid: On the Two-Gap Model, Home Goods Disequilibrium and Real Exchange Rate Misalignment”, *Journal of International Economics*, 21, pp 123-136.

Yano, M. and Nugent, J. (1999), “Aid, Nontraded Goods, and the Transfer Paradox in Small Countries”, *American Economic Review*, 89(3), pp 431-449

Younger, S. (1992), “Aid and the Dutch Disease: Macroeconomic Management When Everybody Loves You”, *World Development*, 20(11), pp 1587-1597