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## Debt crisis, net transfers, and the GDP growth rate of the developing countries

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TEXTO PARA DISCUSSÃO  
Nº 222

DEBT CRISIS, NET TRANSFERS, AND THE GDP  
GROWTH RATE OF THE DEVELOPING COUNTRIES

EDMAR L. BACHA

DEBT CRISIS, NET TRANSFERS, AND THE GDP GROWTH RATE  
OF THE DEVELOPING COUNTRIES

Edmar L. Bacha

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1. INTRODUCTION<sup>1</sup>

The concept of net transfers became popular in the economic literature, as a consequence of the Keynes-Ohlin debate in the 1920s, on the German reparations problem. However, in the growth models developed in the post-WW-II period, net transfers were set aside, being replaced by the concept of foreign savings, or net capital inflows. It is only recently, with the debt crisis, that net transfers reappeared in the economic growth literature<sup>2</sup>.

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<sup>1</sup> Prepared under contract with UNCTAD as a background paper for a G-24 report on the future of the World Bank. The views expressed in this paper are those of the author and do not necessarily reflect those of the UNCTAD Secretariat. With the usual caveats, I am indebted for comments to Dragoslav Avramovic, Sidney Dell, Roger Lawrence, Pedro Malan, and John Williamson.

<sup>2</sup> Avramovic is apparently the earliest post-WW-II reference on the subject, introducing the concept of "resource transfers" in the context of an analysis of the debt and growth prospects of the developing countries. Mason and Asher (pp. 217-221), in their semi-official history of the World Bank, also make use of the "net transfer of funds" concept, which figures prominently in the latest World Bank Debt Tables.

## SUMMARY

The purpose of this paper is to demonstrate the relevance of the net transfer concept to analyze the growth prospects of heavily-indebted developing countries. A conceptual shift is proposed, in analysing the sources of investment financing, from the traditional dichotomy between foreign savings vs. national savings, towards a more relevant dichotomy between net real resource transfer vs. domestic savings at constant prices. The consequences of introducing the foreign exchange constraint and the fiscal constraint in the analysis of the impact of foreign transfers on the developing countries are also discussed.

## RESUMO

O propósito deste texto é demonstrar a relevância do conceito de transferências externas para analisar as perspectivas de crescimento dos países em desenvolvimento altamente endividados. Uma mudança conceitual na análise das fontes de financiamento do investimento é proposta, substituindo-se a dicotomia tradicional entre poupança externa e poupança nacional, por uma nova dicotomia entre transferência líquida de recursos reais do exterior e poupança doméstica em preços constantes. Também se discutem as consequências de se introduzirem a restrição de divisas e a restrição fiscal na análise do impacto das transferências externas sobre os países em desenvolvimento.

The reemergence of the net transfers concept in the context of the debt crisis can be justified on two grounds. First, net transfers are a critical determinant of the growth prospects of debt-ridden developing countries. Second, net transfers are also a critical determinant of the sustainability of the debt accumulation process of these countries. These two topics are dealt with successively in Sections 2 and 3.

Section 4 discusses the role of terms of trade changes in the measurement of net transfers, and introduces a distinction between net real resource transfers and net financial transfers. Data for nine developing countries in the 1980s are reviewed, to indicate the relevance of a conceptual shift from the traditional distinction between national savings vs. foreign savings, towards a more relevant distinction between net real resource transfers vs. domestic savings at constant prices, as sources of domestic investment financing.

Section 5 argues that - even with the amendments of the previous sections - the traditional savings/investment approach is insufficient to indicate the extent of the negative impact of the external shocks of the 1980s on the growth prospects of the developing countries. The argument is that many of these countries are today facing a stagflationary condition, because of their incapacity to generate foreign exchange and/or to raise sufficient government revenue, to compensate for the significant losses of foreign transfers experienced in the 1980s. Hence, the traditional savings/investment balance should be supplemented by an analysis

both of the foreign exchange constraint and of the fiscal constraint, for a better understanding of the impact of foreign transfers on the growth and stabilization prospects of the developing countries.

Conclusions are summarized in Section 6.

## 2. NET TRANSFERS AND GDP GROWTH

To appreciate the relevance of net transfers for the economic growth of debt-ridden developing countries, we start from the basic national accounting identity, asserting the equality between income and spending in an open economy:

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

where  $Y$  is domestic income (GDP),  $C$  is consumption (private and government),  $I$  is investment,  $X$  is exports of goods and non-factor services, and  $M$  is imports of goods and non-factor services. This can be condensed as:

$$Y = A + X - M \quad (2)$$

where  $A = C + I$  is total spending of the residents of the country, that is, the sum of (private and government) consumption with investment.

Then, net (real resource) transfers are defined as:

$$N = M - X \quad (3)$$

That is, net transfers is the excess of imports over exports of goods and non factor services - which we will also

refer as the trade deficit. Replacing this definition in the previous equation, we obtain:

$$N = A - Y \quad (4)$$

Thus, net transfers is the - positive or negative - excess of domestic absorption over domestic income. If positive, it measures by how much the trade deficit allows domestic residents' spending to exceed domestically produced output. If negative, it indicates how much spending, out of a given domestic income, the trade surplus is requiring domestic residents to forgo.

The financial counterpart of the net real resource transfer can be obtained from the balance of payments accounts. Let  $J$  stand for net factor services to abroad, and  $F$  to net capital inflows<sup>2</sup>. Then, the balance of payments accounts require that:

$$N = M - X = F - J \quad (5)$$

That is, the financial counterpart to the net real resource transfer is the difference between net capital inflows and net factor services to abroad. In section 4 below, we will argue that if the terms of trade are changing, a distinction needs to be made between the concepts of the net real resource transfer and the net financial transfer. In the following, however, we will refer to net transfers indifferently as the net real resource transfer,  $M-X$ , or the net financial transfer,  $F-J$ .

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<sup>2</sup>  $F$  is defined as the sum of net capital inflows to all residents, including the Central Bank. Hence, international reserves accumulation by the Central Bank is netted out of  $F$ . In other words,  $F$  is just the negative of the current account deficit.

Most developing countries, particularly after the debt crisis, have become credit constrained economies, in the sense that the value of  $F$  is by and large determined by decisions which are beyond the control of local governments<sup>4</sup>. Moreover, since the ninety-seventies, the net factor payments to abroad of a large number of developing countries have been dominated by the interest payments on their foreign debts. These depend on the accumulated external debt and on world interest rates, which are given, as far as the developing countries are concerned. Hence, except for the option of defaulting on their foreign liabilities, net factor payments to abroad are also beyond the control of local governments.

The conclusion is that the difference between  $F$  and  $J$ , that is, the net transfer, is by and large beyond the reach of local governments. This means that, since the debt crisis, the

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<sup>4</sup> The value of  $F$  is negatively affected by capital flight, which is a decision variable in the hands of the local private sector. In the following, we will assume that capital flight is a negative function of the net financial transfer to foreigners, and, hence, beyond the control of the local government. This is particularly realistic in cases in which the net financial transfer to abroad is being made by the local government to foreign creditors, and is being financed by an unsustainable increase in domestic debt, monetary or otherwise. This situation induces the local private sector to anticipate a future increase in domestic taxation of locally-held capital, which seems to be the fundamental reason for capital flight in heavily indebted developing countries. Hence, unless a substantial reduction occurs in the net financial transfer to foreigners, it is difficult to see how capital flight could be reversed in these countries.  $F$  is also affected by the decisions of the local Central Bank regarding international reserves accumulation. Over the medium haul, international reserves variations will tend to be minor, and hence are ignored in the following.



excess of domestic spending over domestic income is a variable that is largely outside the control of the policy making process of the developing countries.

Hence, for the 1980s grasso modo it can be said that foreign determined variations in foreign transfers have conditioned the domestic spending capacity of developing countries.

In this context, to arrive at the relationship between domestic income growth and net transfers, we use the national accounts identity between income and spending plus the definition of net resource transfers, to write the following expression for the level of investment:

$$I = (Y - C) + N \quad (6)$$

This says that investment is equal to the sum of net transfers with the difference between domestic income and consumption - or domestic savings<sup>5</sup>. For a given level of domestic savings, investment depends on net transfers.

In a simple Harrod-Domar model, the GDP growth rate,  $y$ , is obtained immediately from the equation above, simply by using the relationship:

$$y = a(I/Y) \quad (7)$$

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<sup>5</sup> This is distinct from national savings, which is equal to the difference between national income and consumption; with national income defined as the difference between domestic income and net factor payments to abroad.

where  $a$  is the incremental output-capital ratio<sup>4</sup>. Replacing  $I$  from the equation above, we obtain:

$$y = a[S/Y + N/Y] \quad (8)$$

where  $S = Y - C$  is domestic savings.

Domestic savings is in principle under the control of the developing countries, although obviously restricted by their low income levels and underdeveloped taxation systems. Hence, equations (6) and (8) above divide the financing of investment - and, hence, the sources of the output growth rate - between a variable which is potentially under local control - i.e., domestic savings - and a variable which is mostly under the control of foreign residents - i.e., net transfers. If domestic savings are invariant, fluctuations in foreign transfers will be reflected on the investment rate and, hence, on the output growth rate of the developing countries.

### 3. NET TRANSFERS AND DEBT ACCUMULATION

In the previous section, the importance of the net transfers was justified in terms of the external constraints on domestic spending, for a given domestic income level; as well as of the external constraints on output growth, for a given domestic

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<sup>4</sup> For simplicity, we take the incremental output-capital ratio to be constant, but the argument in the text would clearly hold under more elaborate production functions.

savings rate. To summarize: as net factor payments to abroad are largely beyond local policy control, they should be subtracted from net capital inflows, to obtain an appropriate measure of the limitations that the financial transactions with the rest of the world are imposing both on the capacity to spend and on the investment rate of debt-ridden developing countries.

The relevance of the foreign transfers concept is also brought out when consideration is given to the sustainability of a debt accumulation process.

The initial observation is that debt accumulation will certainly be sustainable if the growth rate of the debt is negative - which means that the debtor country is tending through time to become a net creditor to the rest of the world.

Developing country governments are very far from becoming net creditors to the rest of the world, and an argument can be made that it would be undesirable for them to do so. A weaker test of debt accumulation sustainability would thus seem appropriate for the case under consideration, as recently suggested by Simonsen and Spaventa, among others. This test requires that the growth rate of debt is not larger than the growth rate of domestic output or exports (whichever is a best measure of the developing country's capacity to service the external debt - in the following we will use domestic output as this measure<sup>7</sup>). If this occurs, the ratio of the external debt to domestic output will either remain

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<sup>7</sup> For a discussion of the appropriate concept of debt servicing capacity, see Cohen.

constant or be declining through time. We could thus define a debt accumulation process as sustainable, when the debt is growing at a rate which is not larger than the capacity of the developing country to have it serviced.

The value of net transfers (as a ratio to domestic output) is a critical variable to determine whether a debt accumulation process is sustainable or not. To arrive at this conclusion, first note that debt accumulation (or, more precisely, the accumulation of net foreign liabilities) is equal to net capital inflows, as defined in the previous section. These are used to finance either the interest payments on accumulated debt (or, more precisely, the net factor payments to abroad) or the net real resource transfer. If the interest rate is given, the growth rate of the debt will depend on the value of net transfers.

More precisely, the following equation obtains for the change in the debt-to-income ratio through time:

$$(D/Y)' = (D/Y)(j - y) + N/Y \quad (9)$$

where  $(D/Y)'$  is the rate of change of the debt ratio  $D/Y$ ,  $j$  is the interest rate,  $y$  is the growth rate of domestic output, and  $N/Y$  is the ratio of net transfers to domestic output<sup>®</sup>.

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<sup>®</sup> To obtain equation (9), we first use equation (5) to express "foreign savings" - or net capital inflows - as the sum of net transfers and net factor payments to abroad (this sum is simply the balance of payments in current account):

$$F = J + N$$

Let  $D$  stand for the stock of net foreign liabilities, and  $j$  for the rate of interest on these liabilities. Then,  $J = jD$ , whereas  $F$  is equal to the rate of change of  $D$ .

We write the ratio of external debt to domestic income as  $D/Y$ . For sustainability of a debt accumulation process, we want to ensure that  $D$  is growing at a rate not higher than  $Y$ . In other words, we want to ensure that  $D/Y$  is either constant or tending to zero through time.

If we use primes ( $'$ ) to denote rates of change, we can write:

If the debt ratio is to remain constant or decline through time, then  $(D/Y)'$  has to be either zero or negative. Given the initial debt ratio, the interest rate and the output growth rate, the sustainability of a debt accumulation process will thus depend entirely on the behavior of the ratio of net transfers to domestic income.

The previous equation has a sobering implication: as long as the interest rate is higher than the output growth rate, net transfers have to be negative in order to ensure the sustainability of a debt accumulation process.

But if net transfers are negative, the argument in the previous section suggests that the output growth rate will tend to be low - hence, a vicious circle is formed. As interest rates rise - as they did in the beginning of the decade and are doing again in the late eighties - creditors will tend to restrict the extension of new loans, in order to avoid an unsustainable debt accumulation process from occurring. Lacking "new money", developing countries will have to generate trade surpluses - hence being victimized by negative net transfers - in order to keep current on interest payments on past debt. The cost of doing this is that investment rates have to contract, thus lowering output

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$$(D/Y)' = (1/Y)D' - (D/Y)y$$

where  $y = Y'/Y$  is the growth rate of domestic income.

Sustainability of debt accumulation requires that  $(D/Y)'$  is either zero or negative. When  $(D/Y)'$  is zero, the debt ratio  $D/Y$  remains constant. When  $(D/Y)'$  is negative, the debt ratio  $D/Y$  is tending towards zero.

Noting that  $F = D'$ , we can use the definition of  $F$  above (with  $J$  written as  $jD$ ), to obtain equation (9) in the text.

growth rates, and hence, further inducing creditors to cut new loans in order to avoid the debt ratio to grow without limit.

In the end, this process will converge to the dubious situation in which much of the developing world finds itself today<sup>9</sup>: with extremely low output growth rates and victimized by massive negative net transfers to abroad <sup>10</sup>.

#### 4. NET TRANSFERS AND THE TERMS OF TRADE

The discussion in the previous sections suggests that the concept of net transfers can profitably be used to analyze both the determinants of the output growth rate and the sustainability of the external debt accumulation process of the developing countries. In this sense, it is perfectly capable of replacing the concept of foreign savings, which has traditionally been used for these purposes.

But more importantly, the net transfers concept has an important advantage over foreign savings, which is that it allows a clearer separation between the determinants of capital

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<sup>9</sup> Convergence of this dynamic process at non-negative output growth rates requires that the initial debt-to-output ratio is less than the incremental capital-output ratio.

<sup>10</sup> Net transfers, in this perspective, are an "equilibrium" variable, the value of which as a ratio to GDP has to be equal to  $-(D/Y)(j - y)$  in order to maintain the debt-to-GDP ratio constant. This means that - for a given GDP growth rate - debt service forgiveness, either in the form of a lower  $D$ , or a lower  $j$ , is the only possible form of reducing the amount of negative net transfers from the highly-indebted developing countries.

accumulation which are broadly under local government control from those which are mostly under external control.

To illustrate this, consider the case of an external interest rate shock which is not refinanced abroad and, as a consequence, results in a drop of domestic investment rates. In the traditional separation between foreign savings and national savings, this occurrence would be registered as a decline in national savings, hence suggesting that variables theoretically under domestic control were responsible for the observed drop in investment rates. Whereas a separation between net transfers and domestic savings would correctly indicate the source of the drop in investment rates to be foreign rather than domestic.

The point is thus that the dichotomy domestic savings / foreign transfers provides a more appropriate split between domestic and foreign sources of investment financing than the traditional dichotomy national savings / foreign savings does.

This leads to another important point, which is that terms of trade movements are an essential ingredient to analyze the extent to which variables under external control are affecting the growth prospects of developing countries. The reason is that a deterioration of the terms of trade reduces the net real resource transfer embedded in a given net financial transfer.

To arrive at this conclusion, first observe that if national accounts are done at constant prices, then we can write:

$$I^* = (Y^* - C^*) + (M^* - X^*) \quad (10)$$

where the symbol (\*) indicates that the variables are calculated at constant base-year prices.

The relationship between the trade deficit in current and constant prices is given by:

$$M - X = (M^* - X^*) + (dP_m \cdot Q_m - dP_x \cdot Q_x) \quad (11)$$

where  $dP_m$  ( $dP_x$ ) is the change in import (export) prices from the base-year to the current-year, and  $Q_m$  ( $Q_x$ ) is the quantum of imports (exports) in the current-year. The second term inside parentheses in the RHS will be denoted as the terms of trade effect.

Noting finally that the foreign financial transfer,  $F-J$ , is equal to the trade deficit at current prices,  $M-X$ , we can write:

$$I^* = (Y^* - C^*) + [(F - J) - (dP_m \cdot Q_m - dP_x \cdot Q_x)] \quad (12)$$

This divides the sources of investment financing into a variable which is potentially under domestic control, namely, domestic savings at constant prices,  $Y^*-C^*$ , and two variables which are by and large under foreign control, namely, financial foreign transfers,  $F-J$ , and the terms of trade effect,  $dP_m \cdot Q_m - dP_x \cdot Q_x$ .

This expression should be compared to that traditionally used by the World Bank, which is<sup>11</sup>:

$$I = (Y - J - C) + F \quad (13)$$

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<sup>11</sup> Cf., for example, Table A.11, of the World Development Report 1988.



In this formulation, investment financing is split into national savings,  $Y-J-C$ , and foreign savings,  $F$ , with all variables measured in current prices<sup>12</sup>.

The following points arise in a comparison of the two formulae:

(i) As previously mentioned,  $J$  should be subtracted from  $F$ , to provide a more appropriate measure of the foreign contribution to investment. This has the obvious implication that foreign savings overestimates the effective foreign contribution to growth, which is more appropriately measured by the value of foreign transfers. Moreover, as the developing countries faced substantially higher world interest rates and external debt burdens in the 1980s than in the 1970s, the variation of foreign savings in the 1980s underestimates the negative variation of the foreign contribution to growth in this period.

(ii) All variables should be calculated at constant prices, with the following consequences:

\* As the terms of trade of the developing countries deteriorated substantially during the 1980s, the effective contribution of foreign finance to their growth, as correctly measured by the net real resource transfer (which is equal to the financial transfer less the terms of trade effect), is less than that measured by the financial transfer alone.

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<sup>12</sup> The difference between "current" and "base-year" prices refers only to relative prices, as all prices should be understood to be divided by the implicit GDP price deflator, in order to avoid the distorting effect of domestic inflation on the comparisons between different time periods. In practice, this is normally done by presenting all variables as ratios to nominal GDP/GNP.

\* The terms of trade deterioration may also lead to an underestimation of domestic savings when measured in current prices, instead of at constant prices. This should occur in cases where imports are an important component of domestic consumption, and where the implicit price deflator of GDP follows closely the price of exports. This effect might however be reversed, depending on the price behavior of non-tradables and on their relative importance in GDP and in consumption spending.

\* If the negative effect of a terms of trade deterioration on foreign transfers is not compensated by an increase in domestic savings at constant prices, then investment at constant prices will tend to be smaller than indicated by investment at current prices.

These expectations are by and large borne out by an examination of the growth experience of nine developing countries in the 1980s - three each of Africa, Asia, and Latin America -, as summarized in Tables 1, 2, and 3.

The figures in Table 1 indicate that the negative impact on these developing countries of the reversal, from positive to negative, of the net real resource transfers was not only very substantial, but, with only a few exceptions, stronger than measured by the variation of the financial transfer, and always stronger than measured by the variation of foreign savings<sup>13</sup>.

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<sup>13</sup> The unexplainable exceptions are Argentina and Ivory Coast in 1985, and Nigeria and the Philippines in 1987. In the cases of Korea and India, the smaller value of the net real resource transfer, when compared with that of the financial transfer, is consistent with the terms of trade improvement experienced by these countries in the period.

The figures in Table 2 indicate that domestic savings in these countries were not only much higher, but also that, with a few exceptions, behaved much more positively than indicated by national savings<sup>14</sup>.

Finally, the figures in Table 3 confirm that, in general, the decline in the 1980s of gross domestic investment at constant prices was in fact more pronounced than indicated by the investment figures at current prices.

As a consequence of these findings, and in order to provide a more accurate picture of the investment financing process in the developing countries, the recommendation can be made that the World Bank and other international agencies should calculate and publish data on investment and savings for these countries both at current and at constant prices, with due attention paid in the financing side to the concepts of net real resource transfer and domestic savings at constant prices.

##### 5. NET TRANSFERS, AND THE FOREIGN EXCHANGE AND FISCAL GAPS

The discussion of the previous sections was designed to motivate a shift of emphasis from the traditional dychotomy foreign savings/national savings to a newer dychotomy, real

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<sup>14</sup> The figures in Table 2 also indicate that, for half of the cases under consideration, the presumption that a terms of trade deterioration would reduce the value of savings at current prices, when compared with savings at constant prices, is not verified.

resource transfer/domestic savings at constant prices, when analyzing the process of investment financing in developing countries, particularly under the conditions of the 1980s.

This discussion implicitly accepted a view of the growth process of developing countries as being constrained by the total availability of savings of both foreign and domestic origin. The recent experience of the heavily-indebted developing countries, however, suggests that - even with the modifications above - this approach underestimates both the extent of the negative impact of external shocks, and the costs to these countries of attempting to replace the loss of external transfers by domestic sources of finance. There are two lines of reasoning which lead to these conclusions. One is related to the foreign exchange constraint that, as a consequence of the external shocks, many of these countries now face. Other, to the fiscal constraint that plague the government accounts of many others, since the eruption of the international debt crisis<sup>15</sup>.

In the following, we first discuss how the foreign exchange difficulties accentuate the negative impact of negative foreign transfers on the developing countries' GDP growth rate; and then consider the same set of issues from the perspective of the budget constraint of these countries' governments.

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<sup>15</sup> A fuller discussion of the savings, foreign exchange and fiscal constraints, and of their interactions in the determination of growth and inflation in debt-ridden developing countries, is found in a companion paper, see Bacha(1989).

### 5.1. Net transfers and the foreign exchange gap

To obtain a simple expression for the foreign exchange constraint, we start from the balance of payments equality between the trade deficit and the financial transfer:

$$M - X = F - J \quad (14)$$

Divide imports into two types: complementary capital goods imports,  $M_k$ , and other imports,  $M_o$ . Define net exports,  $E$ , as the difference between exports and other imports:

$$E = X - M_o \quad (15)$$

and let  $M_k$  be given by:

$$M_k = mI \quad (16)$$

where  $0 < m < 1$  is the import content of investment, which, for simplicity, we assume to be constant.

Replacing (15) and (16) into (14), and reshuffling terms, we get:

$$I = (1/m)[E + (F-J)]$$

Introducing the critical assumption that the level of net exports,  $E$ , cannot surpass a critical value,  $E^*$ , given by world demand, the foreign exchange constrained level of investment - which we write as  $IE$  - is given by<sup>16</sup>:

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<sup>16</sup> As other imports,  $M_o$ , are netted out of exports to get net exports, a simplifying assumption, which could be easily relaxed without affecting the results, is that these other imports are invariant to domestic income levels.

$$IE = (1/m)[E^* + (F-J)] \quad (17)$$

We now proceed to compare this expression with that given by the savings/investment balance, as in (6), except that, for this purpose, we will assume that income is at its potential or full employment level,  $Y^*$ . In this case, the limiting value of investment, as given by the savings constraint - which we write as IS -, is given by:

$$IS = (Y^* - C) + (F - J) \quad (18)$$

A comparison of (17) with (18) yields two important results. First, as  $1/m$  is higher than unity, foreign transfers variations have a bigger impact on investment - and hence on the GDP growth rate - of foreign-exchange constrained economies than on savings-constrained economies<sup>17</sup>. Second, as  $E^*$  is normally lower than  $Y^* - C$ , foreign-exchange constrained economies have a harder time replacing foreign transfers than savings-constrained economies do. This in the sense that a larger proportional variation in the variable potentially under domestic control - exports in this case - is required, to compensate for a given negative variation in foreign transfers.

## 5.2. Net transfers and the fiscal gap

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<sup>17</sup> This is a traditional result of the Chenery-Bruno two gap model. See Chenery and Bruno, Chenery and Strout, McKinnon, and Bacha(1984).

Similar results are obtained when consideration is given to the fiscal constraint on the growth process of developing countries. A simple formalization is as follows. Split capital formation between government investment (including state-owned enterprises),  $I_g$ , and private investment,  $I_p$ :

$$I = I_g + I_p \quad (19)$$

Government investment in developing countries has typically three sources of finance: foreign transfers, primary budget surpluses, and money printing. In some cases, IOUs and short-term Treasury bills are also important sources of financing, but for our purposes these near-moneys can be encompassed in a broad concept of base money - the important thing is that a domestic market for long-term government bonds does not exist, or can only be tapped at very high real rates of interest.

Denote  $dH$  as the variation in base-money holdings,  $G$  as government consumption, and  $T$  as taxes, and assume that all net foreign capital inflows,  $F$ , come to finance the government budget, and also that all net factor payments to abroad,  $J$ , are paid out from the budget. Then, the overall government budget restriction yields the following equation for government investment:

$$I_g = dH + (T - G) + (F - J) \quad (20)$$

where  $F - J$  is the foreign transfer;  $T - G$ , the primary budget surplus in current account; and  $dH$ , the variation in base-money supply.

Next, assume that private investment depends on government investment, in such a way that, as a maximum, its value is:

$$I_p^* = k^* \cdot I_g \quad (21)$$

This expresses the idea that late-comer development is characterized by a central role for government investment, in infrastructure and basic industries, which sets an upper limit for profitable private investment to occur. This is the crowding-in hypothesis, rooted in Gerschenkron's analysis of European history and with significant empirical support in the successful post-WW-II industrialization drives of countries as diverse as Brazil, Israel, India, Korea, Mexico, and Turkey<sup>10</sup>.

Then, replacing in (19) the values for  $I_p$  and  $I_g$  given in (20) and (21), we obtain the following expression for the fiscally-constrained level of investment - which we denote as  $I_T$ :

$$I_T = (1+k^*)[dH + (T-G) + (F-J)] \quad (22)$$

A comparison of this with the savings-constrained level of investment in equation (18) yields the following results. First, as  $k^* > 0$ , variations in foreign transfers have a bigger impact on investment - and on the GDP growth rate - in fiscally-constrained economies than in savings-constrained economies. Second, ex-ante, the sum of  $dH + (T-G)$  will not necessarily be smaller than  $Y^*-C$ , since the government has the printing press at its service. However, what is normally true is that  $T-G$  is small and difficult to increase. Hence, it is often through inflation financing - i.e., increases in base-money supply - that developing countries governments will find a substitute for reductions in foreign transfers.

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<sup>10</sup> For an analysis of the empirical evidence on the complementarity between government infrastructure investment and private investment in developing countries, see Blejer and Khan.



If consideration is given to the twin objectives of stabilization and growth, the requisite value of  $dH$  will be very small, which means that contractions in  $F-J$  will have to be compensated by increases in the primary budget surplus,  $T-G$ . This considerably dramatizes our initial assertion that, when consideration is given to the fiscal constraint, developing countries find it much harder to replace foreign transfers by domestic forms of finance than suggested by the overall savings constraint. Private savings may be available, but the government - whose investments are necessary for growth recovery - may be unable to tap them, except through inflationary means<sup>17</sup>.

## 6. CONCLUSIONS

One purpose of this paper was to argue that the net transfer concept is a better alternative than the concept of foreign capital inflows, to analyze the growth problems of the heavily indebted developing countries. In the first place, it provides a better measure of the limitations that foreign constraints impose on the GDP growth rate of these countries. In

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<sup>17</sup> This conclusion points out to the adequacy of leveraging debt relief measures with both a fiscal reform and a concentration of public investment in sectors which are indeed complementary to private sector investment, as a means of increasing respectively  $T-G$  and  $k^*$  in equation (22). For an initial discussion of the role of external conditionality in inducing such policy changes in the context of the provision of debt-relief measures, see Bacha(1989).

the second place, its value is a major determinant of the sustainability of their external debt accumulation processes.

Moreover, the net transfer concept has an important advantage over the concept of foreign capital inflows, in that it allows a clearer separation between the determinants of capital accumulation which are broadly under the control of local governments, and those that are mostly under external control.

This was exemplified with the case of an external interest rate shock which is not refinanced abroad and, as a consequence, results in a drop of domestic investment. In the traditional separation between foreign savings and national savings, this occurrence would be registered as a decline in national savings, hence suggesting that variables theoretically under domestic control were responsible for the observed drop in investment rates. Whereas a separation between net transfers and domestic savings would correctly indicate the source of the drop in investment rates to be foreign rather than domestic.

Another point is that terms of trade shocks should be factored in, when analyzing the impact of net transfers on the growth prospects of developing countries. Thus, rather than using the concept of financial transfers, the appropriate measure of the foreign contribution to growth should be the net real resource transfer, which is the sum of the financial transfer with the terms of trade effect.

The empirical importance of all these points was illustrated with summary data for the investment rates and their

sources of financing for nine developing countries in the 1980s. One consequence of these results is a recommendation to the World Bank and other international institutions, to start publishing data on investment and savings for the developing countries, both at current and constant prices, with emphasis placed on the measurement of the net real resource transfer concept.

The previous discussion accepted a view of the growth process of the developing countries as being constrained by the total availability of savings of both foreign and domestic origin. But the argument was put forward that the recent experience of the heavily-indebted group of developing countries implies that - even with the suggested modifications - this approach underestimates both the extent of the negative impact of external shocks, and the costs to these countries of attempting to replace the loss of external transfers by domestic sources of finance.

Two lines of reasoning led to these conclusions. The first considered that many developing countries face a foreign exchange constraint, rather than a savings constraint, as the major impediment for the recovery of their growth processes. In this case, the paper recapitulated the argument of the two-gap literature, to the effect that foreign transfers variations not only have a bigger impact on the output growth rate of such countries, but also that they have a much harder time replacing foreign transfers than savings-constrained economies do.

A second argument took note of the fact that, for many highly-indebted middle income countries, the main source of growth

- and inflation - difficulties seem to derive from government budget limitations, rather than from foreign exchange constraints or an overall savings restriction.

In this case, it was shown that foreign transfer variations have a bigger impact on the GDP growth rate of fiscally-constrained economies than in savings-constrained economies. Considering the twin objectives of stabilization and growth, it was also argued that such fiscally-constrained developing countries find it much harder to replace foreign transfers by domestic forms of finance than suggested by the overall savings constraint. For private savings may be potentially available, but the developing country governments - whose investments in infrastructure are necessary for growth recovery - may be unable to tap them, except through inflationary means. The conclusion is that debt relief and public sector reform should come hand in hand, in a process of adjustment with growth in the heavily indebted group of developing countries.

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TABLE 1  
NINE DEVELOPING COUNTRIES: FOREIGN SAVINGS, FOREIGN TRANSFERS,  
AND TERMS OF TRADE, 1980, 1985, 1987 (as a proportion to GDP)

Country/Concept	1980	1985	1987 (est.)
<b>Argentina</b>			
foreign savings, current prices (FS)	3.4	1.4	6.2
financial transfers (FT)	2.2	-6.6	-0.2
real resource transfer (1980-prices) (RT)	2.2	-5.6	-2.7
terms of trade (ToFT, 1980=100)	100.0	89.8	81.2
<b>Brazil</b>			
FS	5.4	0.2	0.5
FT	2.2	-5.0	-3.0
RT	2.2	-6.7	-3.9
ToFT	100.0	89.1	97.1
<b>India</b>			
FS	3.2	3.5	2.4
FT	3.6	3.1	2.0
RT	3.6	4.1	3.2
ToFT	100.0	114.2	114.3
<b>Ivory Coast</b>			
FS	11.4	3.5	1.5
FT	6.1	-13.2	-5.6
RT	6.1	-10.4	-8.1
ToFT	100.0	95.9	91.5
<b>Kenya</b>			
FS	14.6	4.9	8.8
FT	11.4	1.1	5.1
RT	11.4	-5.7	-2.4
ToFT	100.0	91.9	87.1
<b>Korea</b>			
FS	11.1	3.0	6.2
FT	7.8	-0.5	-8.5
RT	7.8	-0.3	-4.3
ToFT	100.0	106.1	105.2
<b>Mexico</b>			
FS	5.1	-0.9	0.1
FT	2.3	-4.9	-2.0
RT	2.3	-7.6	-10.9
ToFT	100.0	97.7	70.0
<b>Nigeria</b>			
FS	-5.4	-1.3	1.6
FT	-9.1	-3.3	-4.1
RT	-9.1	-1.9	-5.4
ToFT	100.0	89.8	49.1
<b>Philippines</b>			
FS	5.8	-0.5	-0.1
FT	5.7	-2.9	-0.9
RT	5.7	-3.5	2.6
ToFT	100.0	91.7	97.8

Source: Computed from special tabulations supplied by the W.Bank.

TABLE 2  
 NINE DEVELOPING COUNTRIES: GROSS NATIONAL AND DOMESTIC SAVINGS,  
 1980, 1985, 1987  
 (as a proportion to GDP)

Country/Concept	1980	1985	1987 (est.)
<b>Argentina</b>			
National savings, current prices(NS)	18.8	7.1	3.8
Domestic savings, current prices(DSU)	20.0	15.1	9.0
Dom. savings, const' t 1980-prices(DSO)	20.0	15.4	15.2
<b>Brazil</b>			
NS	17.5	16.5	19.2
DSU	22.9	21.7	22.7
DSO	22.9	22.8	19.8
<b>India</b>			
NS	21.0	22.5	21.8
DSU	20.6	22.9	22.3
DSO	20.6	19.9	19.2
<b>Ivory Coast</b>			
NS	16.8	16.0	11.5
DSU	22.2	25.8	18.6
DSO	22.2	21.7	17.9
<b>Kenya</b>			
NS	15.4	15.3	15.8
DSU	18.7	19.0	19.6
DSO	18.7	23.1	23.9
<b>Korea</b>			
NS	20.0	27.0	35.3
DSU	23.3	30.5	37.6
DSO	23.3	32.2	37.6
<b>Mexico</b>			
NS	22.0	22.8	15.3
DSU	24.9	26.7	17.5
DSO	24.9	26.2	26.89
<b>Nigeria</b>			
NS	25.9	9.2	14.2
DSU	29.5	11.2	19.9
DSO	29.5	12.1	15.6
<b>Philippines</b>			
NS	24.9	14.4	14.6
DSU	25.0	16.9	15.4
DSO	25.0	16.8	10.9

Source: Computed from special tabulations provided by the World Bank.



TABLE 3  
NINE DEVELOPING COUNTRIES: GROSS DOMESTIC INVESTMENT (GDI)  
(as a proportion to GDP)

Country/Concept	1980	1985	1987 (est.)
Argentina			
GDI-current prices (ICU)	22.2	8.5	9.9
GDI-constant 1980-prices (ICO)	22.2	9.8	12.5
Brazil			
ICU	22.8	16.7	19.7
ICO	22.8	16.2	15.9
India			
ICU	24.2	26.0	24.2
ICO	24.2	24.0	22.3
Ivory Coast			
ICU	28.2	12.6	13.0
ICO	28.2	11.2	9.8
Kenya			
ICU	30.0	20.1	24.6
ICO	30.0	17.4	21.5
Korea			
ICU	31.1	30.0	29.1
ICO	31.1	32.8	33.3
Mexico			
ICU	27.2	21.9	15.4
ICO	27.2	18.6	15.9
Nigeria			
ICU	20.4	7.9	15.8
ICO	20.4	10.2	10.2
Phillipines			
ICU	30.7	13.9	14.5
ICO	30.7	13.3	13.6

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Source: Computed from special tabulations supplied by the World Bank.

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