

**DISCUSS AND CONTRAST  
THE WORLD BANK AND THE IMF MODELS  
OF STABILISATION AND ADJUSTMENT:  
ARE THEY COMPATIBLE?**

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## **INTRODUCTION**

The 1980s witnessed a significant increase in the importance and influence of the World Bank (WB) and the International Monetary Fund (IMF) on macroeconomic policy formulation and implementation in many Developing Countries. The dominance of the IMF and WB models on practical macroeconomic policy formulation and implementation, the fact that the models adopted by each one of those institutions differ significantly, and the distressing experience of conflicting strategies, priorities and conditionality, have encouraged research to develop a unique model which simultaneously achieve the objectives of the two institutions and of the countries concerned. Researchers are beginning to ask whether the models are compatible, a third model (combining the two) is consistent, and if theoretical and methodological development along the lines and restrictive assumptions of the two models is worthy at all.

This essay briefly discusses some of the literature analysing those questions. To do so, the essay is developed in six more sections. The first summarises the fundamental macroeconomic framework needed to analyse (im)balances and policy formulation. The second discusses the demand and the supply side types of adjustment and stabilisation programmes, as an introduction for the debate about the IMF and WB models. The third and fourth discuss the IMF and WB macroeconomic models, respectively. The fifth summarises the differences between the models and discusses the theoretical “merged model”. The last looks at the tensions between the models and presents the argument about their compatibility.

## **THE GENERAL MACROECONOMIC FRAMEWORK<sup>1</sup>**

Consistency is a first and basic requirement in macroeconomic analysis. Any model, independently of the combination of the problems it addresses, the priorities it pursues, and the way it perceives the main economic behavioural relationships, needs to be internally consistent. Hence, it is important to start by defining what is meant by macroeconomic (im)balances. The main identities of the national accounts are production (Q), income (Y) and expenditure (A). For the economy as a whole:

$$Q \equiv Y \equiv A \tag{1}$$

All sectors of the economy face well defined budget constraints:

$$\text{Income} + \text{Net Transfers} \equiv \text{Expenditures} + \text{Savings} \tag{2}$$

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<sup>1</sup> This section relies heavily on Tarp 1993, Khan, Montiel and Haque 1990, and Agenor and Montiel 1996.

$$\text{Savings} + \text{Borrowing} \equiv \text{Acquisition of Physical} + \text{Financial Assets} \quad (3)$$

The economy is assumed to have four sectors: private (non-government), public (government), external and banking (intermediary central banking system). Each sector, except the banking sector, receives and spends income (Y), accumulates assets and faces budget constraints. The banking sector has no current income or savings, but faces a budget constraint of resource flows. For simplicity, the model does not include rents and interest on banking assets.

### **Private Sector**

The private sector receives income from wages (W), profits ( $\pi$ ), net transfers from the government ( $\text{NTR}_{gp}$ ) and net transfers from the foreign sector ( $\text{NTR}_{fp}$ ):

$$Y_p = W + \pi + \text{NTR}_{gp} + \text{NTR}_{fp} \quad (4)$$

The private sector's income is spent on consumption ( $C_p$ ), direct taxes ( $T_d$ ), interest payments on private foreign debt ( $\text{INP}_{pf}$ ) and savings ( $S_p$ ).

$$Y_p - (C_p + T_d + \text{INP}_{pf} + S_p) = 0 \quad (\text{income/expenditure balance}) \quad (5)$$

The private sector accumulates assets through private savings plus borrowing from the banking sector ( $\Delta \text{DC}_p$ ), in the form of investment (I), financial assets (M), net private borrowing from the government ( $\text{NPB}$ ) and net foreign assets from the external sector (NFA).

$$S_p + \Delta \text{DC}_p = I_p + \Delta M + \Delta \text{NPB}_g + \Delta \text{NFA}_p \quad (\text{asset constraint}) \quad (6)$$

The private sector's budget constraint is given by:

$$\begin{aligned} S_p - I_p &= Y_p - C_p - T_d - \text{INP}_{pf} & (\text{budget/savings constraint}) \\ &= \Delta M + \Delta \text{NPB}_g + \Delta \text{NFA}_p - \Delta \text{DC}_p \end{aligned} \quad (7)$$

### **Government**

The government's revenue comes from indirect taxes net of subsidies ( $T_i - S_b$ ), surpluses from state owned enterprises (OS), direct taxes ( $T_d$ ) and net transfers from the foreign sector:

$$Y_g = (T_i - S_b) + \text{OS} + T_d + \text{NTR}_{fg} \quad (8)$$

The government's revenue is spent on public consumption and savings, and on net payments to the private and foreign sectors:

$$Y_g - C_g - (\text{NTR}_{gf} + \text{INP}_{gf}) - S_g = 0 \quad (\text{income/expenditure balances}) \quad (9)$$

Accumulation of public assets is a function of public savings and borrowing from the private, banking and foreign sectors. These assets are accumulated in the form of public investment and net foreign assets hold by the government:

$$S_g + \text{Borrowing} = I_g + \text{NFA}_g \quad (\text{asset constraint}) \quad (10)$$

$$\text{Borrowing} = \Delta \text{DC}_g + \Delta \text{NPB}_g + \Delta \text{NFA}_g \quad (10.1)$$

$$S_g + \Delta DC_g + \Delta NPB_g = I_g + \Delta NFA_g \quad (10.2)$$

The budget constraint (fiscal deficit) faced by the public sector is:

$$\begin{aligned} S_g - I_g &= Y_g - C_g - I_g - NTR_{gf} - INP_{gf} && \text{(savings constraint)} \\ &= \Delta NFA_g - \Delta NPB_g - \Delta DC_g && (11) \end{aligned}$$

### **Domestic Monetary System**

The domestic monetary system (for simplicity, defined as the central bank) plays a financial intermediary role, and ensures that the money stock of the economy equals the sum of changes in credit to the private and public sectors and in foreign reserves ( $\Delta R$ ) (balance constraint). Since the money market is expected to clear at all times, money stock equals money demand and money supply.

$$\Delta M = \Delta DC + \Delta R \quad \text{(money flows)} \quad (12)$$

$$\Delta DC = \Delta DC_p + \Delta DC_g \quad \text{(sectoral allocation of credit)} \quad (12.1)$$

$$\Delta R = \Delta M - (\Delta DC_p + \Delta DC_g) \quad \text{(balance constraints)} \quad (12.2)$$

$$\Delta M \equiv \Delta M_d \equiv \Delta M_s \quad \text{(money market in equilibrium)} \quad (13)$$

### **Foreign Sector**

The foreign sector's income equals the value of the domestic economy's imports ( $Z$ ), plus private and government sectors' interest payments on debt to the foreign sector.

$$Y_f = Z + INP_{pf} + INP_{gf} \quad (14)$$

Income is spent on exports from the domestic economy, savings and net transfers to the domestic economy (to the government and private sectors).

$$Y_f - X - NTR_{fg} - NTR_{fp} - S_f = 0 \quad \text{(income/expenditure balance)} \quad (15)$$

Asset holding in the foreign sector equal liabilities of the domestic economy:

$$S_f = -(\Delta NFA_g + \Delta NFA_p + \Delta R) \quad \text{(asset constraint)} \quad (16)$$

An increase in the liabilities of the domestic economy (corresponding to a positive capital account) finances the current account deficit (CA).

Therefore, the budget constraint of the foreign sector is given by the current account deficit of the domestic economy:

$$\begin{aligned} CA &= X - Z - INP + NTR \\ &= \Delta NFA_g + \Delta NFA_p + \Delta R && \text{(budget constraint)} \end{aligned} \quad (17)$$

### **General Balance and Conclusions**

Summing up the constraints of the four sectors, the national account identity is obtained:

$$Y \equiv C + I + X - Z \quad (\text{national account identity}) \quad (18)$$

$$C + I = Y + (Z - X) \quad (\text{absorptive capacity}) \quad (19)$$

[where  $C+I$  is the absorptive capacity of the economy ( $A$ ),  $Y$  is domestic income, and  $(Z-X)$  is the amount of external resources transferred into the domestic economy, equivalent to the trade deficit ( $TD$ )].

Equation (19) shows the relationship between absorption capacity, domestic income and external resources. Equation (20), below, shows that the trade deficit is equal to the excess of absorption capacity over domestic income [if  $(Z > X)$ ,  $(A > Y)$ ].

$$(X - Z) = (Y - A) \quad (20)$$

Now, it is possible to draw some conclusions for the discussion concerning macroeconomic balances. First, while an increase in  $A$  is necessary to transform a backward economy, it is not sufficient. Problems with inadequate and excessive consumption patterns and inefficient investment can generate permanent trade deficits and a balance of payments crisis.

Second, external shocks, to which LDCs are particularly vulnerable because of their production and trade patterns, can be an important source of balance of payment crisis. For example, a sudden depreciation of the terms of trade decreases  $X$ , and either  $Y$  increases (what is difficult because of technological, market and financial rigidities), or  $A$  has to be adjusted. Alternatively, the foreign sector must come with additional net transfers.

On the other hand, a sudden appreciation of the terms of trade (e.g., a coffee boom) generates the conditions for "Dutch disease". The sudden increase in disposable income leads to a sudden increase in consumption [or in the overall absorption capacity ( $C+I$ ) of the economy]. Because of the increase in forex earnings there are no constraints for consumption of tradables (tradables can always be imported). However, there will be a bottleneck in the supply of non-tradables, such that the price of non-tradables will rise. The change in relative prices of non-tradables to tradables is equivalent to the appreciation of the real exchange rate ( $RER$ ). As a result,  $Z$  increases and  $R$  decreases (if there are no trade and capital controls). Often, LDCs face cyclical shocks, leading to a continuous drain of their foreign reserves ( $R$ ) and to a permanent balance of payments ( $BoP$ ) crisis.

Third, whether the source of imbalance is internal or external makes no difference in terms of the need of adjustment *per se*. However, the source of imbalances makes a significant difference in terms of the design of the adjustment and stabilisation package.

Fourth, the duration and magnitude of the crisis, as well as the expected time lag between implementation of stabilisation and adjustment measures and actual results, also affect the design of the packages. Both problems are closely related to the structure of the domestic economy and the form of its integration in the world economy.

Fifth, stabilisation and adjustment of LDCs' economies cannot be entirely left to the process of automatic market adjustment of relative prices. The outcome of the market mechanism is extremely uncertain and not necessarily more efficient. The process of price adjustment takes time and there might be an interim period of recession. Therefore, the economy may never recover from the effects of relative price adjustment. Finally, there are distributional concerns: the distributional impact of market-led adjustment may be highly unacceptable. Thus, this is the argument for deliberate stabilisation and adjustment policy.

## TYPES OF STABILISATION AND ADJUSTMENT PROGRAMMES<sup>2</sup>

Planned stabilisation and adjustment are desirable when imbalances, such as the slowing of economic growth and growing external deficits and inflationary pressures, appear. However, there are various ways of interpreting the underlying and inter-linked reasons for poor economic performance (e.g., exogenous or endogenous shocks), which lead to markedly different policy conclusions. Furthermore, the specific form of adjustment depends not only on the combination of problems at hand (e.g., specific imbalances, impact in the short and long-run, on the stock or flows), but also on the assigned priorities (objectives pursued), and on the perceived nature of the economy (how policies are thought to work).

For the purpose of this essay, two main categories of stabilisation and adjustment approaches (demand and supply side) will be examined.

The demand-side approach targets expenditure (consumption and investment), and its instruments are fiscal and monetary policies. This approach is not concerned with micro-economic implementation, performance and impact in any direct or explicit way, though its policies affect microeconomic behaviour and activity. Its aim is to reduce the absorptive capacity ( $C+I$ ) in order to reduce demand to a sustainable level (in line with supply). If the economy is overheating (excess demand internally), while an unsustainable BoP deficit is present, it might be necessary to use fiscal policies (increase taxes and reduce government expenditure) and monetary policies (control credit expansion) to reduce absorption and increase savings. By cutting borrowing, disposable income (and so imports) and credit expansion, this approach may have a positive effect on foreign reserves as well. Demand-side policies have the added advantage of yielding fast results.

However, in many LDCs external imbalances go together with recession and inflation. In this case, even in the unlikely event that demand-side policies succeed in reducing demand below a certain minimum threshold, inflation may not go away and recession may worsen.

Demand-side stabilisation and adjustment impact on long-run growth depends on the social profitability of investment projects being cut (or opportunities not taken). In theory, whether  $C$  or  $I$  is cut ( $A=C+I$ ) depends on inter-temporal choices. In practice,  $C$  may be more difficult to cut for political and social reasons, and therefore a disproportionate cut in  $I$  will occur. It is unlikely that demand-side policies, alone, can work properly in most LDCs. They must be combined with supply-side policies.

The supply-side approach targets output and income. Its aim is to increase the supply of goods and services an economy produces at any level of aggregate demand. This approach can be classified according to whether more emphasis is put on removal of price distortions or on a all set of related issues which affect economic performance, and according to whether more attention is paid to resource allocation or expansion of the productive capacity.

The neo-classical view of supply-side policies puts the emphasis on the removal of market distortions, which are thought to be induced by government action. Policies for “getting prices right”, privatisation and trade liberalisation are expected to enhance competition and reduce the incremental capital output ratio ( $ICOR = dK/dY$ , where  $K$  is the stock of capital). This reduces the investment requirements at any rate of GDP growth. As a result, income increases faster than the overall absorptive capacity such that, savings can increase without affecting consumption significantly. In the process, inflation and demand for money would fall, and the current account would improve. Though it puts some emphasis on micro-economic aspects, such as privatisation and trade, in general the neo-classical supply-side version is much more concerned with macroeconomic relationships and prices (taxes, credit expansion and the exchange rate).

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<sup>2</sup> This section relies heavily on Tarp 1993, FitzGerald 1993, and Mosley, Harrigan and Toye 1991.

The structuralist view of supply-side policies emphasises that there is no theoretical argument against “getting prices right”. However, there are practical problems with that. First, what is “right” under different circumstances? Second, removal of price distortions is far from sufficient to improve economic efficiency, due to imperfect output and capital markets, disruption of production and trade channels, asymmetric information, technological rigidities, institutional constraints of different order and low price elasticities of supply. Third, social and economic disruption in the interim period, due to relative price changes, may have a long-lasting negative effect.

Outright trade liberalisation may aggravate BoP imbalances, generate loss of fiscal revenue, and favour a shift towards higher import-component consumption of the richer groups of the society. It is interesting to notice that trade and capital controls (which affect flows of foreign exchange) and taxation (which sterilise sudden booms of foreign exchange flows by allowing a temporary budget surplus) can offset the negative impact of the shocks by interfering with the mechanism of transmission within the macroeconomic framework. On the other hand, there is an enormous social and economic cost involved in the collapse of the import-substitution industry. Factor-price cutting, particularly wage cutting, may affect consumption, productivity and the ability to develop technological capacity.

Structuralist views favour more selective policies, which take into account the economic, political, social, institutional and technological conditions as determinants of economic (in)efficiency. Therefore, structuralist approaches pay a great deal of attention to the microeconomic conditions under which crisis have been generated and policies are expected to be implemented, in addition to the necessary attention paid to the macroeconomic framework and conditions to raise savings and investment rates in a sustainable way.

In the context of the above discussion, the next two sections discuss two mainstream models of stabilisation and adjustment: the IMF demand-side approach, and the WB neo-liberal supply-side approach.

## THE IMF MODEL: STABILISATION AND FINANCIAL PROGRAMMING<sup>3</sup>

The IMF mandate is to help member countries to correct short-term external imbalances. When imbalances are not inherently short-term, corrective policy-measures have to be adopted. When the IMF became involved with LDCs crisis, its approach was based on “shock therapy” aiming at achieving fast and once-for-all stabilisation. However, the fact that LDCs face systematic and violent external imbalances has led to some recognition that stabilisation requires the removal of essential institutional and structural rigidities. Thus, the IMF became more involved in structural adjustment. As a result, two new modalities of assistance were introduced in the late 1980s for very poor and highly indebted countries (particularly in Sub-Saharan Africa), which are the *Structural Adjustment Facility* (SAF) and *Enhanced Structural Adjustment Facility* (ESAF).

Despite of the recent changes, the IMF model is designed to tackle monetary imbalances, which are thought to explain, *per se*, the external and internal imbalances faced by most LDCs. The IMF targets generally are inflation and foreign reserves (or the current account deficit, CA), and its main instruments of policy are control of monetary expansion and management of the exchange rate. The macroeconomic framework adopted by the IMF is based on the following four simplified equations:

$$\text{national balance: } Y = (C + I) + (X - Z) = A + TD$$

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<sup>3</sup> This section is based on Tarp 1993, FitzGerald 1993, Khan, Montiel and Haque 1990, Diaz-Bonilla 1990.

external balance:  $\Delta R + \Delta NFA = (X - Z) - (INP - NTR)$

monetary balance:  $\Delta M = \Delta R + \Delta DC = \Delta M_d = \Delta M_s$

fiscal balance:  $(S_g - I_g) = \Delta NFA_g - \Delta NPB_g - \Delta DC_g$

Those equations do not form a model because no behavioural relationships (i.e., clues as how the adjustment takes place) are incorporated. The national balance is related to the external balance through the trade deficit (X-Z) and to the fiscal balance through the government's expenditure, or absorption capacity,  $(C+I)_g$ . The external balance is associated, as well, with the monetary balance through the level of foreign reserves ( $\Delta R$ ), and with the fiscal balance through the change in net foreign assets held by the government ( $\Delta NFA_g$ ). The monetary balance is correlated with the fiscal balance through the credit expansion to the government ( $\Delta DC_g$ ). An increase in the fiscal deficit increases income through its impact on absorption capacity, but disturbs external and monetary balances through its impact on net foreign assets and domestic credit (both used to finance the budget deficit). The monetary and fiscal balances, together, determine the state of the external balance at any level of income.

Despite the IMF claims that its basic model of stabilisation has evolved together with developments in the theory and economic conditions, the fact is that if the money velocity of circulation is assumed constant and relative prices do not change, the IMF model is identical to Polack's model developed in the early 1950s (when the IMF had nothing to do with LDCs). Polack's model introduces a few behavioural relationships into the above four equations. First, the money demand is a function of nominal income, and the velocity of money circulation is constant ( $M_d.v = Y$ ). Second, imports are a function of lagged nominal income, by the marginal propensity to import [ $\Delta Z_t = m.\Delta Y_{t-1}$ , where  $m = (dZ/dY)dY$ ]. Third, income, exports and non-trade related flows of foreign resources ( $\Delta F$ ) are exogenous.

In this model, monetary variables are a function of, and only have an impact on, monetary variables. There is no link between credit and investment and capital accumulation, nor even investment and savings are considered explicitly.

The transmission mechanism of the model operates as follow. Any expansion of domestic credit increases the money stock by the same amount. If the economy has spare capacity, that expansion is reflected in the acceleration of the rate of growth of real GDP. If the economy is close to full employment, the effect of monetary expansion on income is nominal. As income grows, so do imports. As a result, the level of foreign reserves fall and the current account deteriorates (recall that X are assumed exogenous - there is no link between monetary expansion and increase in export capacity and actual exports). As foreign reserves decrease, imports fall back to the original point and so do income and money balances. Therefore, the only lasting effect of monetary expansion is a lower level of foreign reserves (or a weaker current account).

Therefore, fiscal and monetary measures to promote exports and reduce imports have no effect in the long run (they may even worsen the CA). However, in the short-run those measures may be important to restore the level of foreign reserves, as the impact of an increase in income on imports is lagged.

Hence, the first instrument of policy in the IMF stabilisation package is the control of credit expansion. The private demand for money (and so the private demand for credit) is a function of nominal income. On the other hand, crowding-out credit to the private sector is undesirable. Therefore, there is a sub-element implicit and explicit in the policy to control credit expansion: contraction of the credit to government. The government must either raise taxes, or cut its expenditure. Actually, the control of the fiscal deficit and public borrowing are two of the four crucial policy-conditionalities of the IMF programmes in practice.

Polack's model has been expanded to incorporate the short-term effect of changes in relative prices of tradables to non-tradables. The problem is that if government expenditure

increases, the price of exports face a sudden boom or the prices of main imports rise fast, demand for non-tradables increases, and so does the relative price of non-tradables to tradables. As a result, in the short-run the RER appreciates and the current account deteriorates. (In the long run, it is assumed, only real variables affect the RER. For example, if the RER appreciates, a higher demand for imports will re-adjust the relative prices bringing the RER back to the original point). The change in relative prices may have a strong short-run destabilising effect, or, even, a long-term effect on the real variables. Therefore, the IMF introduced the exchange rate as an instrument of short-run stabilisation policy. This instrument became even more relevant since the vast majority of the LDCs were running extremely overvalued nominal exchange rates for long periods of time, therefore creating the need for exchange rate devaluation and adjustment.

The exchange rate transmission mechanism works as follow. Suppose the supply of money is greater than the normal demand for money ( $\Delta M_s > \Delta y^*/v$ . Recall that  $M_d \cdot v = Y$ ). This will reduce foreign reserves up to a point where the money market clears. However, in the process of adjustment the current account deteriorates. A devaluation of the exchange rate would, in the short-run, push the domestic price level upwards. Normal (nominal) demand for money would increase, and the money market would clear without affecting foreign reserves. Hence, the exchange rate would have played a stabilisation role.

However, there are two points to consider. First, the exchange rate effect is short-term: works on impact. Second, if the real problem, the excessive supply of money, is not solved, the current account will deteriorate systematically. Therefore, exchange rate policies work better if combined with adequate control of the credit expansion.

To summarise, the IMF stabilisation programme targets two variables: inflation and foreign reserves. To achieve its targets, the programme uses two main policy-instruments: control of credit expansion, particularly credit to the government, and the exchange rate. The focus on rationing credit to the government and protecting foreign reserves brings about an indirect instrument of policy: the control of the fiscal deficit.

## THE WORLD BANK MODEL: GROWTH PROGRAMMING AND ADJUSTMENT<sup>4</sup>

The WB's mandate is the financing of growth and development over the medium-run. The WB is one of the largest sources of finance for development, directly or through its associated agencies. The WB model focuses on real variables, and emphasises relationships between savings, external resources, investment and growth. The WB became also involved in BoP support because of the characteristics of the external imbalances of the majority of LDCs, the need for a sustainable approach to external financing of savings and trade gaps, and the fact that WB adjustment often goes together with IMF stabilisation packages.

Generally, the main targets of the WB programme are growth of the real GDP ( $\Delta y^*$ ) and the level of foreign reserves ( $\Delta R$ ). Its main policy-instruments are fiscal policies [on the revenue (T) and expenditure ( $C_g$ ) sides], as well as non-trade related inflows of foreign resources ( $\Delta F$ ).

The WB framework is a two-gap model. The main accounting framework of the model is:

Production-expenditure balance:	$Y = C + I + X - Z = A + TD$	(income)
Income-Savings Balance:	$Y = C + S$	(use of income)
Savings and trade gap:	$I - S = Z - X$	(financing needs in a two-gap model)
	$SD = TD$	(equality between savings and trade deficits)

<sup>4</sup> This section is based on Tarp 1993, FitzGerald 1993, Khan, Montiel and Haque 1990, Diaz-Bonilla 1990.



The investment requirements are given by the relationship between the desired rate of economic growth and the ICOR ( $dK/dY$ , where  $K$  is the stock of capital).

$$\Delta y^* = I/k \quad (\text{where } k = dK/dY, \text{ and } \Delta y^* \text{ is the desired real growth rate})$$

Similarly,

$$I = \Delta y^* \cdot k$$

There are a few internal possible solutions to fill the savings gap ( $I > S$ ). Either the desired real growth rate is adjusted (it slows down economic growth). Or measures should be taken to reduce  $k$  (or increase the marginal efficiency of capital). There are some possibilities for increasing the marginal efficiency of capital given that most LDCs productive facilities operate at very low level of capacity utilisation and can benefit from technological and organisational improvements (which requires time and investment). However, the WB model assumes  $k$  as given historically and constant. [Structuralist views would rather focus on the pattern of capital accumulation, investment and consumption, as well as on efficiency measures, to raise savings and reduce  $k$  (see, for example, Akyuz, and Kotte. 1991)].

Alternatively, foreign savings must be made available to fill the gap ( $Z > X$ ). Reducing foreign reserves or borrowing abroad compensates the savings deficit. Therefore,

$$\begin{aligned} S - I &= \Delta NFA + \Delta R \\ I &= S - \Delta NFA - \Delta R \\ I &= -\Delta NFA && (\text{if } S \text{ and } R \text{ are limited}) \\ I &= \Delta NFB && [\text{since } \Delta NFB = -\Delta NFA \text{ (NFB = net foreign borrowing)}] \end{aligned}$$

Thus,  $\Delta NFB$  covers the savings gap.

However, in most LDCs the resource gap has two elements: a domestic savings gap ( $S < I$ ) and a trade, or foreign currency, gap (demand for imports is greater than the capacity to import). The assumptions for a foreign currency gap are the following. LDCs face: (i) low price elasticity of demand for imports (because of import-dependence of installed productive capacity given technological constraints); (ii) low price elasticity of supply of exports because of limited productive and technological capacities and institutional constraints (e.g., market fragmentation); (iii) low price and income elasticities of world demand for their exports (because of world market imperfections and technological progress), leading to the tendency of their terms of trade to deteriorate. Therefore, LDCs face foreign currency (forex) earnings constraints, while depending on imports of both productive capacity (capital) and inputs. Hence, the forex gap prevents potential domestic savings from being fully transformed into investment, so that not only growth is slowed down, but also savings are discouraged and imbalances enhanced. Thus, NFB must also be used to fill the forex gap, in addition to filling of the savings gap. That is what a two-gap model means.

From previous account relationships, imports can be desegregated into investment and consumer goods:

$$\Delta Z = m\Delta y^* = m_1 \cdot \Delta y^* + m_2 \cdot \Delta y^*$$

(where  $m_1$  and  $m_2$  refer to marginal propensity to import investment and consumer goods and services, respectively, and  $m_1 + m_2 = 1$ ).

The typical resource allocation approach would try to minimise imports of consumer goods in order to satisfy the investment needs. However, in many LDCs imports of basic consumer

goods are part of investment strategies: they help keeping supply of basics in line with an ever increasing demand as a function of increasing income, in order to control inflation and keep wages down. Moreover,  $m_1$  is often significantly greater than  $m_2$  already. Nevertheless, in some cases there is a large scope for resource re-allocation resources from luxuries to basic needs consumer or investment goods and services. This is typically the case when income inequality is large and the richer groups face a disproportional higher import-component consumption pattern.

The NFB requirements to fill the two gaps are defined as:

$$\begin{aligned}\Delta NFB &= k.\Delta y^* - sy + \Delta R && [s \text{ is the marginal propensity to save, so that } S=s(y)] \\ &= (\Delta R - sy_{t-1}) + (k - s)\Delta y^* && [\text{savings gap}]\end{aligned}$$

(if  $\Delta R$  is constrained,  $\Delta NFB$  becomes total investment requirements less total savings).

Similarly,

$$\begin{aligned}\Delta NFB &= m_1.k\Delta y^* + m_2.y - X + \Delta R \\ &= (\Delta R - X + m_2.y) + (m_1.k + m_2)\Delta y^* && [\text{forex or trade gap}]\end{aligned}$$

(if  $\Delta R$  is constrained and  $X$  exogenous,  $\Delta NFB$  becomes a function of import requirements and  $k$ ).

This model can be extended to more than two gaps. Actually, Chenery and Strout identified three main development gaps: (i) supply of skills and organisational capacity; (ii) supply of savings; and (iii) supply of imported goods and services. [The first gap, which is associated with human capital, though not explicitly and formally considered in the WB model, has proven to be crucial and absorbs a significant part of non-trade related external flows].

The WB model (Revised Minimum Standard Model, RMSM) is essentially an accounting framework based on the above discussion. The model works as follow. The desired rate of growth of real income can be defined in two ways: (i) set  $\Delta y^*$ , then find the required level of  $S$  and  $\Delta NFB$  (recall the two-gap model); (ii) alternatively, when both domestic savings and foreign borrowing are strongly constrained (thus, assumed fixed), define their expected value and, through  $k$ , compute the sustainable (or possible) rate of growth of real income.

Obviously, any rate of growth will affect the external balance. The effect will be negative (CA will deteriorate) if the economy faces the two gaps, savings and forex. Since it is assumed that  $X$  are exogenous, the greater the rate of growth of real income, the greater the two gaps (therefore, the greater the need for NFB, and the faster the CA deteriorates).

Hence, using fiscal policy the model introduces domestic savings as a strong indirect target. Taxes should raise savings, sterilise boom effects and help to build up reserves. Contraction of government expenditure should release financial resources for private investment, reduce overall foreign and domestic borrowing. That should help to shift resources away from consumption to investment and from non-tradables to tradables, and to balance the financial and forex requirements of the country. The move towards tradables should increase exports. An additional parameter, the exchange rate, aligns relative prices to world prices, helps the money market to clear without deteriorating foreign reserves, and completes the package of incentives to move production towards tradables.

To remove rigidities and enhance supply responses to changes in relative prices, the WB also uses other measures, namely: trade liberalisation, financial liberalisation, capital markets liberalisation and privatisation. This sort of measures has become increasingly more popular among Bank's staff and programmes, and in some case have been used as central part of the

conditionality attached to the financing of the adjustment programmes. Tarp (1993) and Mosley, Harrigan and Toye (1991) argue that adjustment and stabilisation have become weapons to promote economic liberalism.

Formally, the target  $\Delta R^*$  is a function of the (real) income growth rate, the marginal propensity to import, and the responsiveness of imports to the level of the exchange rate. The target  $\Delta y^*$ , in turn, is a function of domestic savings weighted by the marginal parameters  $k$ ,  $s$ ,  $m$  (which show dynamic effects of the responsiveness of income to investment, increase in savings and the sustainability of CA). The assumption, here, is that foreign resources are not freely available and perfectly responsive to a country's need, nor it is sustainable to maintain high levels of  $\Delta F$  for long periods [ $\Delta F = \Delta NFB - INP + NTR$ , (where  $\Delta NFB$  is the forex flow impact on the CA, and  $INP + NTR$  show the forex flow impact on the capital account)].

## CONTRASTING AND MERGING THE IMF AND THE WB MODELS<sup>5</sup>

### **Different Approaches**

So far it has been shown that the IMF and the WB pursue different programmes, with different objectives, policy instruments, and life span. The IMF is expected to carry on a very short stabilisation package, to help offset short-term external imbalances. Its targets are inflation and foreign reserves, and its instruments are restrictive monetary and exchange rate policies associated with tight fiscal controls on spending. The Fund often finds itself involved in successive stabilisation programmes for several years without ever achieving all its goals. The WB is more involved in the medium to long-run sectoral and structural adjustment, aiming at the removal of distortions and rigidities which prevent the domestic economy from being competitive. Its targets are real income growth and foreign reserves (as an indicator of the sustainability of the growth strategy), and its instruments are fiscal policies (to increase savings and re-allocate resources towards investment and tradables) and gap-filling of financing needs.

### **Conflicting Policies**

The IMF tends to be less concerned with the need for sectoral and structural adjustment and GDP growth, and more concerned with the short term stabilisation. On the other hand, the WB has a tendency to emphasise the financing needs of the economy regardless of what the impact of inflows of forex may be on the country CA and willingness to stabilise. For example, five case studies in Latin America (El Salvador, Guatemala, Honduras, Costa Rica and Nicaragua) show that the government and the private sector bargain about each other's share of the permitted credit, because credit ceilings are set below the minimum necessary level to face the financial needs of the sectoral and structural programmes (Diaz-Bonilla 1990). For 1997, the IMF imposed a 50 per cent cut of the project portfolio of the WB in Mozambique. While the IMF claims that those projects were disrupting fiscal and CA stabilisation, the WB argues that the restrictive credit ceilings were preventing current and domestic costs of the projects to be met. At the same time, the government reported its success in cutting inflation by half, but had to acknowledge that monetary and fiscal constraints were preventing the private sector to develop and basic public goods to be delivered at minimum levels.

The WB emphasis on trade and capital market liberalisation and fast privatisation, as part of the package to enhance supply response to changes in relative prices, can have a negative impact on current account targets. Privatisation changes the allocation of the stock of wealth

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<sup>5</sup> This section is based on Tarp 1993, Mosley, Harrigan and Toye 1991, and Khan, Montiel and Haque 1990.

and the distribution of income and tends to increase inequality. Wealth concentration, together with trade liberalisation (and the collapse of import-substitution industries on impact), severe constraints on investment and an increase in forex flows, tend to promote inadequate and excessive import-based consumption and deteriorate the current account. Flows of short-term capital (more likely in countries with developed and open capital markets) appreciate the RER on impact, and deteriorate the current account. The IMF is much less willing to move towards liberalisation, before stabilisation is completed. On the other hand, the WB claims, stabilisation is rarely achieved and liberalisation is crucial to remove distortions of the market mechanism and induce supply responses.

Whereas the IMF is quite strict in monitoring compliance and punishing slippage, the WB is much less capable of doing so, partly because its conditionality are not as precise and are highly qualitative - therefore, much more difficult to monitor and evaluate. Often, LDCs have been mandated to do contradictory things, and end up being punished for having not attained unattainable goals given the conflicting policies and conditionality.

To overcome this set of conflicting policies and problems, two types of measures have been attempted. First, researchers have been working to try to merge the two models. Second, the co-ordination of policies was formally introduced through the Policy Framework Paper (a document prepared by IMF staff and approved by the WB and the government concerned, establishing all the benchmarks and medium term targets and conditionality, which must be followed by all parties).

### **The Merged Model**

In the merged model (Khan, Montiel and Haque 1990), the targets are growth, foreign reserves and inflation, whereas the policy instruments are control of credit expansion (particularly to the government), the exchange rate policy, taxes and government consumption, and external financing. The model works in a very similar fashion to the individual models, with an exception. In the individual models monetary expansion has a short-run effect, balanced, in the long-run, by automatic price and money flows adjustment, and control of money supply ensure current account stability. In the merged, it is obvious that monetary and fiscal constraints may lead to recession.

However rigorous the merged model might be, it has been argued that it is of no practical use. Tarp (1993) argues that the merged model is too complex and difficult to handle, and only assumes away real variables without relating them with monetary variables. In brief, it is not a coherent model, but the sum of two very different ones. The model is relevant for the analysis of inflation, but bad on the other variables. Mosley, Harrigan and Toye (1991) argue that the two institutions are still very much concerned with only one part of the picture, and that may explain why the merged model, and, more important, their work in practice, is not operational for the purposes in mind. Khan, Montiel and Haque (1990:178) argue, in the very same article where they developed the merged model:

*The very diversity of developing countries in terms of, inter alia, production structures, degrees of financial development, trade and exchange regimes, and the type of existing disequilibria, argues for a flexible approach in the design of the programs. Of course, this is not to deny that certain theoretical and empirical relationships may well be common across programs and countries, but the search for a unique model that will simultaneously achieve the objectives of the two institutions, or even of each institution, may well turn out to be an illusive one.*

### **Policy Framework Paper (PFP)**

The other attempt to co-ordinate IMF and WB programmes is the adoption of the PFP. However, as argued by Tarp (1993) and Mosley, Harrigan and Toye (1991), there are four major problems with the PFP. First, the defined benchmarks and conditionality are often unattainable, given the IMF and WB tendencies to underestimate institutional factors and aspects related to implementation, and overestimate the efficiency of indirect policies; hence, it becomes more difficult to implement. Second, the joint conditionality has become too strong, with crucial policy implications on the borrowers and on donors; hence, it becomes too difficult to manage and to build consensus. Third, despite the rhetoric, the IMF and the WB are still two different organisations with different purposes. Therefore, the PFP tends to be, as the merged model, a set of not coherently and obviously related commitments and conditionality. Fourth, because of the above-mentioned problems, the PFP tends to be a matrix of too many activities, but with no clear structure of priorities and mechanisms of implementation. In practice, the way it works only depends on which institutions have more bargaining power in a given moment.

## CONCLUSIONS

The objective of this essay was to discuss and contrast the IMF and WB models of economic adjustment and stabilisation, and argue about their compatibility. The discussion and contrast of the models was done in different parts of this essay and summarised in the previous section. In the last section it was also argued that the models are not compatible in its fundamental issues: goals, targets and instruments of policy (though they share common elements).

There are several factors explaining the inherent incompatibility of the two models. First, they expect to achieve opposite objectives with the same policy instruments simultaneously. This is logically not attainable. Given their theoretical foundations, they are unable to design a coherent approach that integrates macro and micro adjustment, growth and stabilisation, and to find specific policy-instruments for specific objectives. Tarp (1993) argues that the attempt to merge the models has been a process of keeping the IMF approach and assuming away the real variables; the only added value of the new model has been, so far, to show that monetary and fiscal contraction may lead to economic recession. The IMF model is often more consistent and successful, in its own terms, than the WB. This is partly due to the fact that they both understand stabilisation as a goal in itself, independently of the structure of the economy, patterns of capital accumulation and investment, of income distribution and consumption. This is consistent for the achievement of the IMF very narrow goals, but is clearly inconsistent with the WB own broader goals,

Second, Tarp (1993) argues that important developments in macroeconomic theory have not been incorporated in the IMF and WB models. Those developments encompass factors like uncertainty, risk and self-insurance in portfolio choice, inter-temporal choice, the economics of contracts and reputation, the role of the stocks (not only of the flows), the role of time-consistency and pre-commitment in economic policy, rational expectations and its criticisms, development of the endogenous growth models. Developments in microeconomic theory, such as in the new theories of industry and competition and capital markets and information, have not been used to study micro economic and market behaviour. Some of these theoretical developments address the task of combining growth and macroeconomic management in an integrated, dynamic and consistent approach, which both the IMF and WB have not been able to do yet.

Third, to add to the incoherence, the WB adopts a theoretical model from the tradition of development planning, and tries to implement it essentially through price and market

liberalisation. In addition to that, the lack of understanding of the operation of the real markets in specific conditions leads to interesting conflicts such as, when trade liberalisation reduces competition and deteriorates the current account; or flows of foreign capital reduce foreign reserves.

Fourth, the models try to incorporate together the interests of the international financial system, donor community and, to a lesser extent, the country concerned. This tends to make policies and programmes incoherent. Different, not always compatible, interest are reflected in objectives, benchmarks, tasks, mechanisms of implementation, and so on, which are put together in a model or in a binding document with no clear order of priority.

Finally, both models reflect extreme simplifications of the economic problems and relationships they expect to address. FitzGerald (1993), for example, argues that these models, which consider the private sector as the engine of economic efficiency, make assumptions about rational behaviour of economic agents and efficiency of the markets, without ever studying in detail the markets and economic agents they are dealing with in each case. For example, FitzGerald argues, the concept of private sector implicit in both models is that of one homogeneous set of independent individuals making profit-maximising or utility-maximising decisions. Therefore, none of them can understand the difference between a small farmer, with no access to credit, a large domestic firm investing out of retained profits and accelerated depreciation or in association with a bank, and multi-nationals which pursue international investment strategies not influenced by specific countries' fiscal and monetary policies. Similarly, the models cannot understand the role and workings of the informal financial, labour and output markets, which are so crucially important in the LDCs. For the IMF objectives, these differences do not matter very much (though informal financial markets and interest rate responsiveness of the economic agents matter for stabilisation purposes). But they are crucial if the WB expect any success on the supply-side of the economy.

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