

## **Reassessing Fiscal Policy: Perspectives from Developing Countries**

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### **ABSTRACT**

Over the last twenty-five years an anti-Keynesian orthodox approach has envisaged a prominent role for reductions in fiscal deficits in developing countries. Expansionary fiscal policies have been said to result in excessive expansion of aggregate demand leading to current account deficits and inflation, as well as displacing private investment, thereby inhibiting output stabilization and employment recovery. Moreover, chronic fiscal deficits are supposed to be associated with high and explosive debt/GDP ratios. The purpose of this article is to assess the theoretical adequacy of the orthodox approach in the context of developing countries. The author clarifies some common misunderstandings and finds that none of the conventional arguments against fiscal activism is wholly convincing. At the heart of the debate lies the question of assumptions, economic structure and causation mechanisms. The orthodox stories regarding the macroeconomic effects of fiscal policy very often do not go beyond the simple monetarist assumptions or seek to verify the implications against the existing experiences and empirical data from developing countries.

### **INTRODUCTION**

Expansionary fiscal policy and budget imbalances have been at the forefront of macroeconomic adjustment since the early 1980s in both developed and developing countries. Yet developments in macroeconomics over the past several decades are widely believed to have shown the ineffectiveness of discretionary fiscal policy. Indeed, the claim that active expansionary fiscal policies pursued in the 1970s and 1980s (in particular fiscal deficits and increasing debt) were responsible for poor economic performance in developed countries was echoed in most developing countries where the

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stabilization and adjustment policies recommended by the IMF and World Bank called for fiscal retrenchment.<sup>1</sup>

Proponents of this sort of New Monetarism have produced a number of arguments against the use of discretionary fiscal policy and long-term budget deficits. Arguments and proposals, widely accepted even by economist and policy makers in the Third World, have blamed fiscal deficits in good part for an assortment of macroeconomic ills that beset developing countries in the 1980s and 1990s, with changes in overall national saving leading to balance-of-payments problems and high inflation, and over-indebtedness promoting poor investment and growth. Moreover, the prevailing view on fiscal policy sees the rapid accumulation of domestic debt — associated with chronic fiscal imbalances — as impeding control of the fiscal deficit itself, which brings the sustainability problem into the picture. The general conclusion of this dominant but simplified anti-Keynesian view is that fiscal activism and budget deficits must be avoided.

Against this economic backdrop, this article attempts to assess several orthodox arguments about the impact of fiscal policy on external accounts, inflation and the level of output. It also examines the very popular sustainability framework and assesses the consistency requirements that must be imposed on financing options in the context of developing countries. It reviews the existing literature, investigating theoretical differences between orthodox and non-orthodox approaches; it then uses the recent experiences of developing countries as a main reference to show that, very often, the orthodox analysis relies on accounting simplifications, overlooks important causality mechanisms, presumes that there are automatic forces within these economies which ensure high levels of demand, and ignores disturbances that make the fiscal accounts endogenous. Thus, the present orthodoxy overstates the importance of budget deficit targets as well as the ‘active’ nature of budget deficits. Using some accounting conventions that derive from a simple transaction matrix, the article presents mainstream theories and more plausible alternatives. It finds competing interpretations in almost every dimension of fiscal policy. This leads to the conclusion that at the heart of the debate lies the question of the perceived nature of the economy, its institutional structure and the resulting theoretical framework. The existing empirical evidence not only suggests that there are some important failings in the orthodox view and but also supports the analytical arguments offered here.

The next section of the article presents a basic accounting framework (a transactions flow matrix) that can be used as a basis for presenting and discussing the orthodox positions regarding the macroeconomic impacts of fiscal policy. The following section deals with issues concerning relationships between fiscal deficits and the external sector. It shows that a conceptually

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1. As Camara and Vernengo (2004) note, fiscal policy was the first item in Williamson’s decalogue of the Washington Consensus.

complete discussion of the relationship between budget deficits and the external balance would have to cover a possible reversion of the causal link and the fact that the budget deficit may not be considered as an active element incurred on purpose by the government. This part of the article provides several arguments that have received some attention in the context of developing economies but that have not as yet been formulated in a comprehensive way.

The article then addresses the relationship between public sector deficits and inflation, showing that the unidirectional causation from deficits to inflation that derives from the 'inflationary finance' approach is contingent on a set of very limiting assumptions rarely uncovered and fraught with difficulties in developing countries. Moreover, there is very little in the orthodox approach to illuminate the fundamental question about what produces the fiscal deficit. In the subsequent section, the fundamental role of fiscal policy as an output stabilizing tool is discussed. The measurement of the 'correct' budget deficits, that has attracted considerable recent attention in developed nations, should not be used to judge the fiscal policy stance in developing countries due to the numerous unexpected disturbances in the macroeconomic environment that cause the fiscal balance to deviate from targets. This section recognizes the crucial importance of countercyclical fiscal policy for developing countries, notes the overwhelming empirical evidence in favour of a crowding-in effect of public investment and briefly exposes some of the limitations of automatic stabilizers. The demonstration that budget deficit targets do not have any merit at all serves to highlight the deficiencies that lie behind traditional fiscal sustainability analysis in the final section. As well as neglecting the role of seignorage and public investment, the sustainability condition is derived from the assumption that growth and interest rates are impervious to budgetary measures, which may not be the case in developing countries.

## **THE BASIC ACCOUNTING FRAMEWORK**

The accounting framework developed in this section is general enough to outline the way in which mainstream analysis accommodates different fiscal policy exercises. The usefulness of this framework is that it links mainstream stories regarding the macroeconomic effects of fiscal policy into a coherent whole, as well as providing a reference of where we need to start looking for alternative explanations.

The following matrix (see Table 1) describes the accounting structure of the economy. We assume that the economy we are describing is open and includes a government and an aggregated private sector. All flows have a source and a destination. The rows represent the transactions for each expenditure or kind of activity. The columns represent the different institutional sectors. Sources of funds appear with plus signs and uses

Table 1. Transactions-flow Matrix of a Conventional Open Economy

	Private Sector	Government	Central Bank	Rest of the World	Sum
Private Expenditure	$-C, +C, -I_p, +I_p$				0
Government Expenditure	$+G, +I_g$	$-G, -I_g$			0
Income (GDP)	$+Y, -Y$				0
Taxes	$-T$	$+T$			0
Exports	$+X$			$-X$	0
Imports	$-IM$			$IM$	0
Interest Payments	$+rBD$	$-rBD, -e(r^*BF^*), +rC$		$+e(r^*BF^*)$	0
		$-rC$			
Column Sub-total	$S_p - I_p$	$S_g - I_g$		$IM + e(r^*BF^*) - X$	0
Change in Wealth/Debt	$-\Delta BD$	$+\Delta BD, +e\Delta BF^*, +\Delta C$	$-\Delta C, +e\Delta R^*$	$-e\Delta BF^*, -e\Delta R^*$	0

of funds with negative signs so every row must total zero. In a closed system like this each money flow has to come from somewhere and go somewhere, and this shows up in the fact that all row totals of Table 1 are zero. How each sector's saving originates from its incomes and outlays is illustrated in one the bottom panels. The reader should bear in mind that all accounts presented so far have been phrased in nominal terms.

From Table 1 we can see that the private sector in the first column receives income,  $Y$ , that equals the sum of private consumption receipts,  $C$ , private investment receipts,  $I_p$ , government consumption receipts,  $G$ , and government investment receipts  $I_g$ . It also receives interest payments  $rBD$  on assets held with the government. The private sector uses income for consumption and investment purposes, pays taxes,  $T$ , and imports,  $IM$ , and what is left over is its saving,  $S_p$ . Government saving,  $S_g$ , is total tax revenue net of public consumption,  $G$ , and interest payments at home ( $rBD$ ) and abroad ( $e r^* BF^*$ ). The assumption that there are no private holdings of foreign cash implies that any payments or receipts of foreign currency from trade in goods or assets are exactly and simultaneously exchanged by the central bank into its own currency. The central bank issues cash money  $\Delta M$  in exchange for government bills,  $\Delta C$ , and changes in the domestic currency value of international reserves,  $e\Delta R^*$ . Central bank assets are made up then of bill holdings and of gold. As the central bank has no interest-paying liabilities, and gold pays no interest, its profits are equal to total interest receipts from any domestically issued bills,  $rC$ . Finally, foreign saving in local currency terms is imports,  $IM$ , plus the exchange rate ( $e$ ) times the foreign currency value of interest payments,  $r^*BF^*$ , less exports,  $X$ . It is important to emphasize that this framework does not show causation, as there is no behaviour in the expressions.

## FISCAL DEFICITS AND THE EXTERNAL SECTOR

On the theoretical level, mainstream analysis uses two approaches to explore links between external and fiscal deficits: the Keynesian synthesis and the pure monetarist explanation.<sup>2</sup> The Keynesian synthesis claims that no matter the exchange rate regime, there is a positive relationship between the two deficits and that causality goes from fiscal deficits to external deficits. Suffice it to say that different exchange rate systems will imply different transmission channels. The pure monetarist approach asserts that a money-financed fiscal expansion promotes equilibrium adjustments in the domestic and foreign demand for stocks of national assets and leads to a loss of international reserves. Both assign an active role to budget deficits though the former wins on points and has led to the appearance of some simplified variants in developing countries.

The different aspects of these propositions can be explained within the basic national accounting framework presented above in which injections equal leakages in terms of the circular flow of income. Ignoring net interest payments (or net factor services to abroad), then the column sub-total of Table 1 yields

$$(X - IM) = (S_p - I_p) + (S_g - I_g) \quad (1)$$

where  $S_p$ ,  $I_p$ ,  $S_g$ ,  $I_g$ ,  $X$ , and  $IM$  stand for private saving, private investment, public saving, public investment, exports, imports. The role played by the government in accounting for an external deficit is easily discerned through a slight modification of the second term in expression (1). Public saving depends on fiscal revenue,  $T$ , current expenditure,  $G$  and interest payments on the overall stock of public debt,  $r_t B_{t-1}$ , so we have

$$(X - IM) = (S_p - I_p) + (T - G - r_t B_{t-1} - I_g) \quad (2)$$

The Keynesian-monetarist proposition is based on the idea that if the public sector is negatively saving, then aggregate national savings will fall. Accordingly, as long as  $(S_p - I_p)$  is stable, changes in fiscal deficits, specifically in the non-financial fiscal deficit  $G + I_g - T$ , are supposed to be closely associated with movements in the current account deficit. From this viewpoint, the budget deficit presents an 'active' character. The story may state that increasing government borrowing to cover the rising budget deficit leads to higher interest rates, which, in a world of free capital mobility and flexible exchange rate systems, attracts foreign capital, generates an exchange rate appreciation leading to a current account deficit ( $X < IM$ ). From such a proposition the conclusion that might then be reached is that domestic demand and specifically government spending need to contract to improve

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2. The origins of what I call the Keynesian synthesis is traceable primarily to works of Alexander (1952) and Mundell (1962 and 1963).

the current account. This is a well-known story and sometimes debated in developed countries where flexible exchange rate systems prevail.

Under a fixed exchange rate system, a variant of this proposition bases its reasoning on the national accounting identity which says that the difference between domestic absorption and national income is equal to the current account deficit. From the transactions-flow matrix, private saving  $S_p = Y + r_t B_{t-1} - C - T$ . Now the sum of  $C + I_p + G_t + I_g$  is replaced by the term  $A$  often called absorption. Thus, expression (2) becomes:

$$(X - IM) = (Y - A) \quad (3)$$

An increase in the budget deficit (and absorption) may either increase imports — using an output-adjustment mechanism — if the economy is supply constrained in the short-run, or drive up domestic prices and appreciate the real exchange rate if the government is credit-constrained in external and domestic markets and has to finance expansionary fiscal policy by money creation.

However, there is more to the conventional Keynesian posture than this when the matter is extended to the context of developing countries. Very often, the theory suggests explicit links between the government budget constraint and the balance sheet of the Central Bank with the objective of arriving at a formal relationship between fiscal policy and changes in international reserves. The bottom section of the transactions-flow matrix indicates that the budget deficit can be potentially financed by borrowing from the Central Bank, from the public and/or from rest of the world, which gives us:

$$(G + r_t B_{t-1} + I_g - T) = (C_t - C_{t-1}) + (BF_t - BF_{t-1}) + e(BF_t^* - BF_{t-1}^*) \quad (4)$$

Here the subscript  $t$  indexes time, and  $C_t$ ,  $BF_t$  and  $BF_t^*$  represent the stock of government debt held by the central bank at the end of period  $t$ , the stock of government bonds held by domestic residents and domestic bonds held by foreigners at the end of period  $t$ . The term  $r_t B_{t-1}$  as before stands for interest payments on the overall debt and  $e$  is the nominal exchange rate. From balance sheet T of the Central Bank we may write the change in the monetary base as:

$$(M_t - M_{t-1}) = (C_t - C_{t-1}) + e(R_t^* - R_{t-1}^*) \quad (5)$$

where  $R_t^*$  stands for the foreign currency value of international reserves, and  $M_t$  is the monetary base at the end of period  $t$ .<sup>3</sup> Combining (4) and (5) and assuming that the budget deficit has to be financed only by money creation we get:

$$(G + r_t B_{t-1} + I_g - T) = (M_t - M_{t-1}) - e(R_t^* - R_{t-1}^*) \quad (6)$$

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3. Without the presence of banks the monetary base and the money stock are strictly the same.

Conventional wisdom now adds to the model a full monetary block in which the combination of the equation of exchange, the law of one price, the interest-parity theorem, and the equilibrium condition in the money market is linked to the assumptions of a full employment level of output and free capital mobility.<sup>4</sup> This leads to  $M_t = M_{t-1}$  and expression (6) reduces to

$$(G + r_t B_{t-1} + I_g - T) = -e(R_t^* - R_{t-1}^*) \quad (7)$$

A fiscal deficit that is financed by borrowing from the central bank then leads to a fall in the central bank's international reserves without any final change in the stock of money. Accordingly, given an independent and stable money demand function, any fiscal expansion financed by an expansion of the money supply induces economic agents (loaded with excess money balances) to adjust their money holdings to restore their desired level. In the process they buy foreign assets and this means an increase in the balance-of-payments deficit.<sup>5</sup> If, for instance, a real balance effect is taken into account, this spurs an increase in expenditure which, given the full employment of domestic resources, results in increased consumption of foreign goods and a consequent trade deficit. Therefore, the immediate implication of this analysis is that the fiscal deficit should be used as an intermediate target in order to restore the external balance.

Let us now look at the theory that underlies all these approaches. We start with the block of expressions (3) to (6) and the implied relationship given by expression (7). Applied work in macroeconomics for developing countries would recommend scepticism, to say the least, with respect to the general applicability of the aforementioned assumptions that support the results in expression (7). The existence of idle productive capacity and effective demand constraints are absolutely ignored.<sup>6</sup> Moreover, perfect

4. In essence, if we add to the model main structure the equation of exchange  $M_t v = p y$ , the law of one price  $p = e p^*$ , an expression for the interest-parity theorem  $i = i^* + \dot{e}$ , a behavioural expression for the income velocity of money  $v = v(i)$ , and the equilibrium condition in the money market  $M_{dt} = M_{st} = M_t$ , then making the appropriate substitutions in the equation of exchange we get  $M_t v(i^* + \dot{e}) = e p^* y$ . In time  $t-1$  this equilibrium condition means that  $M_{t-1} v_{t-1}(i_{t-1}^* + \dot{e}_{t-1}^e) = e_{t-1} p_{t-1}^* y_{t-1}$ . Now, in a credible fixed exchange rate system  $e_t = e_{t-1}$  and the expected growth of the exchange rate is zero, so that  $\dot{e} = 0$ . From the small open economy assumption and free capital mobility,  $i^*$  is exogenous, so we can assume that it is fixed. All these transform the interest-parity theorem into  $i = i^*$ . Additionally the assumption of an independently determined real income level is consistent with the neoclassical assumption in which real income is a function of the real wage or else fixed at full employment. Putting all these assumptions together we get  $M_t = M_{t-1}$ .
5. Alternatively, if the fiscal deficit is financed by borrowing from the public, domestic interest rates go down and since domestic and foreign bonds are presumed to be perfect substitutes, then domestic residents will increase the demand for foreign bonds, which in turn generates higher capital outflows.
6. There are good reasons to think that effective demand issues have become highly relevant in developing countries. Schydlowsky (1982) and Dutt (1996), for instance, argue that countries in which the industrial sector has progressed into the import substitution industrialization phase are likely to accumulate excess capacity. Rakshit (1989) points out that in

asset substitution is not the norm in developing countries. Without full employment and with imperfect substitution of financial assets (and absence of the interest-parity theorem), the demand for money is not a given anymore and the pure determinism from the budget deficit to changes in international reserves is fraught with problems.

The second lesson derives from expressions (1) and (2) which are merely accounting identities. Though an identity does not prove anything about the direction of causality, the orthodox view falsely presumes that causality has to flow from the saving variable on the right-hand side of identities (1) and (2) to the current account balance on the left. Evidently, there are numerous other possibilities. Let us analyse some of them.

It may happen, for instance, that the foreign account is balanced ( $X - IM = 0$ ) while the deficit has to match the borrowing of the private sector. Here the orthodox causation is faced with insurmountable problems when the budget balance is likely to play a passive role. Expression (2) reduces to

$$(G + I_g + r_t B_{t-1} - T) = (S_p - I_p) \quad (8)$$

This case will apply to some degree in countries where the role of the foreign balance is small as compared with that of other sectors, or when all countries are taken together forming a closed system. Notice that if private investment  $I_p$  is largely independent of saving, then a fall in it can reduce aggregate demand, income and household consumption, generating a fall in government saving.<sup>7</sup> Here, dampening demand to cure the deficit will simply lead to an even lower level of real income.

If the budget deficit is not regarded as an active element incurred on purpose by the government but as a residual derived from the interplay of lending and borrowing of the various sectors in the economy, then a relevant question is: which of these sectors plays an active role and which plays a passive role? The answer depends on institutional circumstances and the macroeconomic closures.

We may argue that in the context of developing countries an institutional structure that distinguishes between capitalists' and workers' income shares may explain passive adjustment of the fiscal accounts.<sup>8</sup> Taking into account

the face of macroeconomic uncertainty, potential investors in developing countries divert their resources to unproductive or speculative assets and this makes demand constraints relevant.

7. Steindl (1979) stressed the rise in personal savings — due to an increase in the standard of living — as a possible determinant of low growth. But here he was thinking in terms of developed countries. Eatwell and Taylor (1998) state that high levels of investment by the private sector, encouraged by a public sector commitment to growth and employment, in turn resulted in healthy fiscal balances during the 1960s, but again they seem to have industrial countries in mind.
8. Within the context of developed countries Lavoie (2000), Palley (1996) and Steindl (1982) have reformulated the private sector saving–investment balance and have split it into households and enterprises.

the distribution of income, we can replace the whole private sector saving–investment balance ( $S_p - I_p$ ) by an ex-post savings deficit or surplus of workers ( $w$ ) and enterprises ( $c$ ), that is

$$(X - IM) = (S_w - I_w) + (S_c - I_c) + (T - G - I_g - r_t B_{t-1}) \quad (9)$$

These revised accounting definitions lead again to non-orthodox implications. Let us continue to assume that there is no financial system but that enterprises finance investment projects by adjusting their profit margins. If the economy is not at the full employment position and if the propensity to spend of the working population is higher than the propensity to spend of capitalist, then a higher profit margin and more regressive income distribution configuration will depress overall private consumption and may lead to a decline in output which, in turn, decreases the collection of taxes,  $T$ , and increases the deficit of the public sector.

In the context of the open economies of Latin American countries, structuralist economists have pointed out reasons why fiscal deficits may respond to, rather than cause, changes in the external accounts.<sup>9</sup> For instance, heavy reliance of corporate income taxes on exports of mineral products may explain the strong link between the foreign and the fiscal sector.<sup>10</sup> Moreover, unexpected changes in export earnings, changes in major import prices, changes in the cost of foreign borrowing, changes in the availability of foreign credit, and changes in general in the external accounts may affect not just the incomes of countries but also their fiscal variables.<sup>11</sup> Leading structuralist authors such as Arida and Lara Resende (1985), Bacha (1992), Bresser-Pereira (1990) and Damil et al. (2005) have argued, for instance, that from the early 1980s, *grosso modo*, foreign-determined variations in net financial flows, specifically in total interest paid on the foreign debt, have been a main factor explaining the increase in fiscal deficits in several Latin American countries. As shown above, however, the conventional analysis that derives from expressions (1) and (3) ignores the net interest payments component of the external accounts.

Bresser-Pereira (1990) sees more complex transmission channels and indicates that, contrary to conventional wisdom, when the burden originating from the external debt is high — as was the case of Brazil in the early

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9. Taylor (1991b) is a good reference on the subject. Regarding the role of external shocks he states: 'Causality runs from the external to the internal deficit' (ibid.: 203).
  10. Tanzi (1986) points out that about 50 per cent of the tax revenues of developing countries may be directly related to the foreign sector.
  11. Recent developing country studies based on Error Correction Mechanisms, Vector Autoregressive Models and Causality Tests contradict the twin deficit hypothesis which claims that there is a unidirectional causality going from fiscal to external deficits in developing countries. See, for example, Anoruo and Ramchander (1998); Arize and Malindretos (2008); Islam (1998); Kouassi et al. (2004); Mansouri (1998); Onafowora and Owoye (2006). Kouassi et al. (2004) suggest that economies that are relatively more open and in which trade plays a relatively more important role are probably more likely to have their domestic developments dictated by the foreign balance.

1980s — and the current account balance is achieved by a reduction of imports, output and private consumption though the public deficit may remain high. If external credit is rationed by foreign banks, the financing of the public deficit has to be done by increasing domestic indebtedness. In an already consumption-constrained private sector this can only be achieved by increasing the interest rate which in turn aggravates the public deficit. In these circumstances, it no longer follows that an external balance leads to a fiscal balance. The current account balance is achieved by a reduction of absorption,  $S_p > I_p$  which is perfectly consistent with  $T < G + r_t BD_{t-1} + r_t^* BF_{t-1} + I_g$ .

Damil et al. (2005) analyse the role that external shocks played in the 1998–2001 Argentinean crises. They argue that the impact of the Russian and Brazilian crises in 1998 resulted in a fatal jump in the country-risk premiums, and access to foreign funds became more problematic, which generated a deterioration of the fiscal accounts. The average interest rate of the total public debt went from 5.8 per cent in 1996 to 9.4 per cent in 2001 and an explosive trend in the public debt interest account drove the interest payments/tax collection ratio from 12.2 in 1998 to 23.4 in 2001. These events found an economy with a considerably appreciated currency, a significant and growing current account deficit and a visible lack of instruments to deal with these problems, given the rigidities of the adapted convertibility rule. Restrictive fiscal policy reinforced the recessionary trend, thus feeding the negative expectations that prevented the expected fall in country-risk premium.

Sometimes foreign interest payments may depend endogenously on export receipts. Analytically, consider for instance a developing economy in which tax receipts originate in direct taxes on residents' income,  $tY$ , and direct income taxes on exports of a raw material or mineral good, where  $t$  is the average tax rate and  $\alpha$  is the share of commodities on total exports. Furthermore assume now that the debt service has a domestic and an international component, that is,  $r_t BD_{t-1}$  and  $r_t^* BF_{t-1}$ . The national account identity (2) can be written now as:

$$(X - IM - r_t^* BF_{t-1}) = (S_p - I_p) + (tY + t\alpha X - G - r_t BD_{t-1} - r_t^* BF_{t-1} - I_g) \quad (10)$$

where the balance of payments of the public sector is  $BPPS = (t\alpha X - r_t^* BF_{t-1})$ . Clearly, it is perfectly possible that a fiscal deficit may be caused by an autonomous fall in exports,  $t\alpha X$ , or an autonomous rise in the international interest rate,  $r_t^* BF_{t-1}$ , quite independent of government decisions to spend. What happens very often is that commodity exporters of highly indebted countries face an inherent instability from fluctuating export prices and foreign interest rates that cause deterioration in the current account which translates into higher budget deficits. If the foreign

interest rate depends on the debt service coverage ratio as in the expression below,

$$r^* = f\left(\frac{r^*BF_{t-1}}{X}\right); \quad \frac{dr^*}{d(r^*BF/X)} < 0 \quad (11)$$

then a fall in export prices affects foreign exchange earnings,  $X$ , and public revenues coming from commodity taxes,  $t\alpha X$ , but also causes deterioration in the debt service coverage ratio which in turn raises foreign interest rates and the net foreign debt service,  $r^*BF_{t-1}$ . Hence, in this case, the public deficit increases *pari passu* with the fall in export earnings.

In other cases attention in developing countries has to be drawn to the need to take full account of capital flows in the national accounting identity. Again this is an aspect that is missing in the conventional transactions-flow matrix. Accordingly we will have

$$\begin{aligned} (X - IM - rBF_{t-1}) &= (\Delta R - CF - \Delta BF) \\ &= (S_p - I_p) + (T - G - r_t B_{t-1} - I_g) \end{aligned} \quad (12)$$

where  $\Delta R$  represents changes in the level of international reserves,  $CF$  the changes in the short-term asset position of non-residents, and  $\Delta BF$  other changes in long-term public external debt (all expressed in domestic currency). Thus if short-term liabilities  $CF$  rise *ex-ante* and other capital account items ( $R$  and  $BF$ ) are given, then one of the right hand side variables must adjust. The relevant story in the developing economies of Latin America and East Asia is that private consumption and investment increases with the increase in short-term inflows ( $dI_p/dCF > 0$  and  $dS_p/dCF < 0$ ) and as a result net imports increase as well. In a fixed exchange rate regime, overvaluation of the exchange rate may prevent export promotion and reinforce the import boom. Therefore, we may have a situation in which the current account deficit is brought about by the sudden changes in the level of capital inflows that are matched by a decreasing private savings gap. Taylor (1998) points out that this was precisely the situation that explains the cases of the Mexican financial crises of 1994 as well as the East Asian crises of 1997–98. In support, Jansen (2002) argues that, in the case of Thailand, fiscal imbalances had nothing to do with the crises. He remarks that fiscal discipline had been excellent in the past and outstanding debt had been very small. Careful examination indicates that external liberalization exercises coupled with lax financial regulation at home and a fixed exchange rate produced substantial capital inflows, generated exchange rate appreciation and resulted in huge current account deficits. Thus, financial inflows generated macroeconomic changes (in all these economies) which played a fundamental role in driving investors' expectations. Public deficits had at most secondary significance in generating the crises.

Not only may endogenous capital inflows and outflows lead to crisis, they may also cause changes in a country's budget deficit. Indeed, a developing economy that is exposed to a sudden turnaround of capital flows, and that

further presents a public sector that is unable to acquire more domestic debt or to impose inflation tax receipts, may face problems of financing the public sector and the balance of payments (Eyzaguirre, 1989; FitzGerald, 2000).<sup>12</sup> Under these circumstances, an adjustment in the budget deficit is the result of policy responses. To simultaneously produce a current account balance and, internally, a reduction in the budget deficit, orthodox adjustment policies recommend a reduction in absorption. Very often this is achieved perversely through the reduction of public sector investment (since the reduction of current public expenditure or an increase in taxes is always very difficult in political terms). But this type of adjustment represents useless austerity since the fall of public investment produces a recessive adjustment, and aggregate saving declines as income drops (see Bacha, 1990, 1992; Eyzaguirre, 1989; Fanelli et al., 1987; Taylor 1991a, 1994; Vera, 2005).

### FISCAL DEFICITS AND INFLATION

One common justification for the inflationary consequences of public fiscal deficits in developing countries is the lack of sufficiently developed domestic capital markets that absorb newly issued government debt. Hence, the central bank often passively finances public deficits. To see the link between fiscal deficits and inflation we get back to expression (4) in the context of a budget deficit financed by money printing and divide both sides by the price level,  $p$ , to get

$$\frac{(G + r_t B_{t-1} + I_g - T)}{p_t} = \frac{\Delta M}{p_t} = \frac{\Delta M}{M_t} \frac{M_t}{p_t} \quad (13)$$

Formally the orthodox approach takes expression (13) and strategically replaces  $\Delta M/M_t$  by  $\Delta p/p_t$  to get

$$\frac{D}{p_t} = \frac{\Delta M}{M_t} \frac{M_t}{p_t} = \frac{\Delta p}{p_t} \frac{M_t}{p_t} \quad (14)$$

Here the overall budget deficit is  $D = (G + I_g + r_t B_{t-1} - T)$ . By multiplying the RHS of (14) by  $p_{t-1}/p_{t-1}$  the result is

$$\frac{D}{p_t} = \frac{\Delta p}{p_{t-1}} \frac{p_{t-1}}{p_t} \frac{M}{p_t} \quad (15)$$

and finally using the definition of inflation,  $\pi = (p_t - p_{t-1})/p_{t-1}$  and the fact that  $p_{t-1}/p_t = 1/(1 + \pi)$ , expression (15) is rewritten as

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12. This was typical of the aftermath of the 1982 debt crisis. The simple three gap model of growth along the lines suggested by several structuralist economists emphasizes precisely the fact that in highly indebted economies fiscal policy and growth prospects are constrained by the country's restrictive access to foreign capital markets.

$$\frac{D}{p_t} = \frac{\pi}{(1 + \pi)} \left( \frac{M}{p_t} \right) \quad (16)$$

To provide an explanation for the relationship between  $D_t/p_t$  and  $\pi_t$ , the orthodox view follows two alternative strategies. One is to work in the context of a fixed exchange rate system and rely on the Ricardian equivalence world in which higher money-financed deficits lead to an increase in private saving (and lower consumption) with no effect on the current account. Thus, money over and above that needed for domestic trade leads to higher inflation. The other is to allow for external imbalances and an immediate adjustment in the exchange rate. In this case, agents find themselves holding excess money balances and spend it on foreign goods and/or assets. As domestic residents sell their local currencies in exchange for foreign currencies, a nominal depreciation occurs. If the purchasing power parity holds then domestic prices will increase.

The following section views the Ricardian Equivalence as a theoretical curiosity in the context of developing countries. However, no matter what strategy is chosen, apart from the need for excess money balances, note that the inflationary finance story requires here  $\Delta M/M_t = \Delta p/p_t$ . It is not difficult to see that this equivalence in turn requires zero output variation (and a fixed productive capacity) in the economy, a constant velocity of money (or money demand function) and fully flexible prices. Within the context of developing countries, analytical exercises based on these restrictive assumptions are not only poorly specified but are at best costly and misleading. It is not only that full employment output does not hold and the demand for money may not be a given in the short run, but that a larger budget deficit — which translates into a larger money stock — does not need to lead to inflation if the long-run steady state effects of fiscal policy on growth are positive. Indeed, endogenous growth models developed in the last decade or so suggest that increasing budget deficits may be expected to increase long-run growth rates (see Gemmell, 2001).<sup>13</sup> In fact, Fazzari (1994) and Arestis and Sawyer (2004a) have argued that the impact that fiscal policy may have on the path of aggregate demand does itself influence the supply-side potential of the economy (through the impact on the size of the capital stock). The relevance of this literature for the fiscal policy–growth relationship in developing countries is something that, of course, needs to be assessed.<sup>14</sup>

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13. Fiscal policy in these models — such as tax breaks for hi-tech industries, public investment and capital income taxes — can have long-run effects to the extent that it affects factor accumulation or influences technical progress.

14. Some preliminary evidence provided by Miller and Russek (1997) suggests that for developing countries, deficit-financed increases in public expenditure retard economic growth and tax-financed increases lead to higher growth. But Adam and Bevan (2003), using a panel of forty-five countries, find that deficits may be growth-enhancing if financed by limited seigniorage (but they are likely to be growth-inhibiting if financed by domestic debt).

The best known formulation of the inflationary finance model explores the role of seigniorage. Seigniorage corresponds to the amount of real resources appropriated by the government by means of base money creation. Seigniorage  $\sigma_t$  is given by

$$\sigma_t = \frac{\Delta M}{p_t} = \frac{\Delta M}{M_t} \frac{M_t}{p_t} \quad (17)$$

It increases with the rate of money creation  $\Delta M/M_t$  and with the amount of real balance  $M_t/p_t$  that people are willing to hold.

If we go back to expression (13), we notice that at first sight the government deficit can be financed by seigniorage. As long as the demand for real balances does not grow, all money growth results in inflation. From this perspective money-financed deficits are inflationary. But not all the increases in seigniorage are inflationary since seigniorage may increase even when inflation is nil, due to increases in the demand for money, for instance.<sup>15</sup> It is important to point out that any notion that fiscal deficits, seigniorage and inflation display a simple relationship in developing countries conspicuously fails simple correlation coefficients (see Easterly and Schmidt-Hebbel, 1991). It is not only that money growth may accommodate increases in the demand for money but also very often countries make different choices on printing money to finance the deficit. High-deficit countries can finance the deficit with cheap domestic finance or extensive concessional external finance and some effectively eliminate printing money as a means of financing. Moreover, money creation and inflation are non-linearly related. This may happen in a situation in which inflation increases with monetization but at the same time the demand for money (and the tax base  $M/p$ ) decreases.<sup>16</sup>

One important and additional difficulty with the canonical inflationary finance approach arises from the fact that the theory assumes complete control over domestic inflation, ignoring some difficulties posed by the endogeneity of the government's budget deficit. In the orthodox approach the fiscal deficit would be the cause of the money creation and inflation, but the prior question about what produces the fiscal deficit is left unanswered. Economists of different persuasions have emphasized that the situation prevailing in developing countries may be one in which adverse external shocks and/or inconsistent income claims of different groups in society are the basic causes of inflation and higher budget deficits.

In reference to highly indebted countries, Dornbusch and Simonsen (1987) and Cardoso (1991, 1992), for instance, have argued that these economies deprived of foreign capital inflows in the 1980s soon needed to finance foreign interest payments, and trade surpluses and exchange rate adjustments

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15. This is Rakshit's (2001) notion of 'legitimate' seigniorage in the context of an economy like India.
  16. Bruno and Fischer (1990) were among the first to observe that seigniorage models are characterized by multiple equilibria, in which different levels of inflation finance the same budget deficit.

had to produce the needed exchange resources. Thus, devaluations not only resulted in higher inflation but also had an important impact on the domestic cost of servicing the external debt. This in turn increased the budget deficits measured in domestic currency and the required money creation.

Apart from finding that a balance of payments crisis, foreign payments obligations or external shocks can lead to an immediate jump in the inflation rate and the fiscal deficit in developing countries, a fiscal deficit can be the result of the capacity of pressure groups to influence political outcomes as they jockey for political power and economic transfers. If the government is weak or exhibits a populist stance, then each of the interest groups can influence fiscal authorities to set net transfers on the group's target item at some desired level. The inflationary bias that is produced as a result of inconsistent and non-coordinated claims that have to be satisfied by a central fiscal authority has been stressed by several authors in the past but also formalized recently.<sup>17</sup> Thus, the unilateral but combined fiscal demands may lead to higher fiscal expenditures (or decreased taxes) stimulating output to the point at which capacity limits abound and generating an inflation externality resulting from the monetization of the deficit. From this perspective, reliance on fiscal austerity alone assuming away co-ordination problems does not address the core of the matter.

So far we have assumed that the fiscal deficit may lead to inflation, but causality may in fact run from inflation to the fiscal accounts. As pointed out by Olivera (1967) and Tanzi (1977), when inflation rises and taxes are paid with a lag, there can be a substantial difference between the value of revenues at the time the taxable event occurs and the real revenues the government actually collects.<sup>18</sup> An increase in inflation will bring a fall in real government revenue (and a higher budget deficit), the extent to which depends on the average collection lag and the prevalent tax burden,  $\tau = T/p_t y$ , that is the initial ratio of taxes to GDP. Formally the actual (inflation adjusted) tax/GDP ratio collected is given by

$$\tau(\pi) = \frac{\tau(0)}{[(1 + \pi)(1 + g)]^{l/n}}, \quad \tau'(\cdot) > 0 \tag{18}$$

where  $l$  is the legal lag for the period  $n$ . Thus, current period tax revenues,  $\tau(\pi)$ , are a function of zero-inflation tax revenues,  $\tau(0)$ , discounted by the rate of growth,  $g$ , and the level of inflation,  $\pi$ .

Another way in which inflation affects the deficit is through the interest payments component. In 1982, the government of Brazil argued with the

17. See Aizenman (1992); Arce (1994); Fraga and Werlang (1983); Heymann et al. (1991); Mondino et al. (1996); Velasco (1987).

18. In fact, Olivera (1967) tried to demonstrate that a fall in ordinary revenues resulting from an increase in inflation may be large enough to outweigh the increase in revenue from the inflation tax. Later, Tanzi (1978) provided simulations that showed that this outcome is entirely plausible, under reasonable parameter configurations. The importance of the Olivera–Tanzi effect is finally reaching mainstream macroeconomic education.

IMF that measuring the deficit in nominal terms was seriously misleading in a high-inflation country, where most of the nominal interest payments on government debt were really accelerated amortizations of principal. The argument was that the conventional or unadjusted deficit was artificially inflated by the presence of an inflation premium in the interest payments of the budget. The IMF accepted this argument, if initially with some reluctance, and hence it sometimes now pays attention to the 'operational deficit', which includes in expenditure only the real component of interest paid on government debt.<sup>19</sup>

The operational deficit deducts from the nominal deficit that inflation component of interest payments on domestic debt. The rationale for this adjustment is the presumption that interest payments are endogenous to the level of inflation (through the Fisher equation). Higher inflation rates are associated with higher interest payments and lower values of the stock of real debt. The reader may wonder why. The fact is that in a world free of money illusion, bond-holders perceive the increase in disposable income (due to higher interest payments) as a compensation for the decline in their real wealth (due to the lower value of their bonds). Bond-holders do not consume the additional income but restore the value of their initial wealth by buying new government bonds.

These implications of inflation in the fiscal accounts are fairly simple to appreciate. The Fisherian equation is given by

$$r - \pi^e = i, \text{ assuming that } \pi^e = \pi \quad (19)$$

where  $\pi^e$  stands for expected inflation and  $i$  represents the real interest rate. Taking the conventional fiscal deficit and dividing the whole expression by nominal income yields

$$\frac{D}{p_t y} = \frac{G}{p_t y} + \frac{I_g}{p_t y} + \frac{r B_{t-1}}{p_t y} - \frac{T}{p_t y} \quad (20)$$

Substituting equations (18) and (19) into equation (20) we get

$$\frac{D}{p_t y} = \frac{G}{p_t y} + \frac{I_g}{p_t y} + \frac{(i + \pi) B_{t-1}}{p_t y} - \frac{\tau(0)}{[(1 + \pi)(1 + g)]^{l/n}} \quad (21)$$

The deficit (as a percentage of GDP) is an increasing function of inflation because inflation increases nominal interest payments and erodes tax revenues due to the Olivera–Tanzi effect.

At this point it is important to distinguish between an active fiscal policy that targets a particular budget position to reach a desired level of inflation

19. Bacha (1987: 757), for instance, points out that one of the main sources of conflicts between the IMF and the government of Brazil in the mid-1980s was the 'continuing difficulty in understanding the relevant economic distinctions between nominal and inflationary-corrected public sector deficits'. In the context of the Argentine economy, Arce (1999) shows how the stance of Argentine fiscal policy changes dramatically, when the budget is adjusted for inflation endogeneity.

(the orthodox view) and the observation that, in developing countries, inflation may instead be the result of the interaction between government behaviour and latent distributive tensions as well as an important source of budget endogeneity.

It seems clear that under these conditions of budget endogeneity, which are pervasive in many developing economies, the budget deficit, or simple budget deficit targets, are not of much significance for judging the efficacy of a government's budgetary programmes.

### THE TASK OF STABILIZING OUTPUT FLUCTUATIONS

The aim of stabilization policy is to keep the level of output close to its potential while inflation and the current account deficit are at acceptable levels. Since, in recent years, monetary policy is increasingly focused on controlling inflation, most explicitly so in countries that adopted inflation targeting, it could be argued that under these conditions the management of the output gap becomes the task of fiscal policy. However, assigning to fiscal policy the task of stabilizing output has run into problems, especially in developing countries. There are at least two main reasons for this. First, in the still prevalent IMF–World Bank-type adjustment, discretionary changes in fiscal policy are seen as unlikely to do much good. In general and in the context of developing countries, the orthodox response to discretionary counter-cyclical fiscal policy alleges the possibility of ‘crowding-out’. Thus, expansionary fiscal policy has been demonized by the dominant orthodoxy and is seen as ineffectual.<sup>20</sup> This view is shared by emerging markets analysts who promote a new-found devotion to fiscal prudence. Second, an increasing number of empirical studies for developing countries suggest that fiscal policy tends to be highly pro-cyclical.<sup>21</sup> Moreover, these two issues cannot be considered entirely independent since the return to a more orthodox policy stance, in the 1980s and 1990s in developing countries, has promoted unmistakably pro-cyclical fiscal practices. This means that, very often, fiscal policy is typically oriented towards maintaining financial solvency in recessions, while during booms it tends to expand with the cycle. In general, orthodox economists and multilateral agencies such as the IMF argue that, against an adverse external shock, fiscal contraction gives international investors confidence which helps avoid capital outflows. Worse

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20. It has sometimes been considered the main cause of inflation and external imbalances, even though — as argued above — none of these links are automatic.

21. For example, Kaminsky et al. (2004) found that fiscal policy is pro-cyclical in a sub-sample of eighty-three low- and middle-income countries. Similarly, Braun (2001) found that government expenditure was pro-cyclical in a panel of thirty-five developing countries for the period 1970–98. Gavin and Perotti (1997) argue that in Latin America, total expenditure and its components are highly pro-cyclical, with recessions being associated with exaggerated collapses in public spending.

than that it is the fact — pointed out by Perry (2003) — that some analysts and policy makers appear to think that counter-cyclical fiscal policies are a luxury that only developed countries can indulge in.

In commenting on these two issues, let us start with the view that asserts the relative ineffectiveness of fiscal policy. The popularly known crowding-out effect presumes that expansionary fiscal actions displace a near-equal amount of private spending. Under this general heading there have been several arguments to the effect that fiscal policy will be ineffective. One form of crowding out emphasizes the Ricardian equivalence theorem. Another form of crowding out is supposed to occur in the context of the IS–LM model when the deficit is financed by selling bonds.

The Ricardian equivalence theorem is based on the idea that, for a given path of global government spending ( $G + r_t B_{t-1} + I_g$ ), the future prospects of taxation to pay for a bond-financed budget deficit reduces consumer expenditure today. Therefore any fiscal expansion is crowded out by a fall in private consumption. This is because rational forward-looking agents in an infinite horizon believe that a deficit finance cut in current lump-sum taxes,  $T_t$ , leads to higher taxes that have the same present value as the initial cut (Barro, 1989). For the purpose of illustration, let us go back to the column sub-total of the transactions-flow matrix and assume a special case in which all financial balances are equal to zero, that is

$$\begin{aligned} S_p - I_p &= 0 \\ T - G - r_t B_{t-1} - I_g &= 0 \\ X - IM - e(r^* BF^*) &= 0 \end{aligned}$$

then if the Ricardian equivalence holds, a sudden tax cut will imply that  $T < G + r_t B_{t-1} + I_g \Rightarrow S_p > I_p \Rightarrow X - IM - e(r^* BF^*) = 0$ , where  $-\Delta T = \Delta S_p$ . Thus, tax cuts will have no effect on national saving since changes in private saving will offset changes in government saving. Assuming that this idea is true, then private consumption will fall and fiscal deficits are expected to have no impact on output.

How does the Ricardian equivalence theorem work in the context of developing countries? On the one hand, *prima facie*, it requires a number of assumptions that might not appear to be satisfied in developing countries. First, the Ricardian equivalence proposition has been derived in the context of full employment, making it essentially irrelevant in the context of economies that exhibit idle resources.<sup>22</sup> Second, particularly in the hard conditions of developing countries, the time horizon over which people take decisions may be relatively short, invalidating the underlying infinite horizon assumption

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22. Arestis and Sawyer (2004a) point out that the proposition assumes that the economy is initially in a situation where *ex ante* investment and savings are equal at full employment. In this context the level of aggregate demand is invariant to the budget deficit position.

that permeates the Ricardian equivalence world. Further, as Giorgioni and Holden (2003) have argued, capital markets in developing countries are not perfect. If financial markets are far from perfect, for instance, households can discount future tax payments with a discount rate that is higher than the interest the government has to pay on bonds (as pointed out by Jansen, 2002). The present value of the future tax payments is thus less than the current tax cut and the tax cut can have real effects (see Blanchard, 1985).

On the other hand, empirical work on the Ricardian equivalence proposition in developing countries produces evidence that is rather weak. Although Haque (1988) and Dalamagas (1992), as well as Giorgioni and Holden (2003), find some tentative support for the Ricardian proposition, most cross-country studies either detect a very weak negative relationship between public and private savings or directly reject the equivalence proposition owing to the prevalence of liquidity constraints in developing countries.<sup>23</sup> Some of these studies find that increased public savings may instead promote a rise in the total volume of savings in developing countries, which reinforces the idea that the determinants of behaviour in household savings for industrial countries are not valid for developing countries and vice versa (see Muradoglu and Taskin 1996).

The other form of crowding out occurs in the context of the IS–LM model when the deficit is financed by selling bonds. With the fiscal expansion, the price of the bonds is driven down (due to oversupply) which is equivalent to an increase in interest rates.<sup>24</sup> But the recent experience in Latin American countries suggests that the story may be different and that causality between interest rate and fiscal deficit needs to be revised. A negative external shock — such as a reversal in the terms of trade or sudden stop in capital inflows — may generate monetary policy reactions. The Central Bank may tend to maintain high interest rates to avoid capital flight and protect the economy from devaluation. Since part of the public debt is indexed to the short-term interest rate, monetary policy translates into high debt service and higher budget deficits (Camara and Vernengo, 2004). Chakraborty (2002) explores the causality issue within the context of recent financial liberalization of interest rates in India and finds that causality runs from real rate of interest to deficit.

Certainly if the Central Bank, operating on an independent basis, responds to a fiscal expansion by raising interest rates, then there could be some form of crowding out, and this kind of monetary policy reaction has been reported over and over in developing countries as a result of the disciplinary effects of

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23. See Corbo and Schmidt-Hebbel (1991); Edwards (1995); Haque and Montiel (1989); Khalid (1996); Lopez et al., 2000; Raut and Virmani (1989).

24. Chowdhury (2004) has examined the crowding out phenomenon along with its related effects of fiscal actions in five South Asian economies (Bangladesh, India, Nepal, Pakistan and Sri Lanka) using a VAR model. He found that budgetary action does not have any perceptible influence on the domestic interest rate of the sample countries.

global markets. But in that case any crowding out depends on the response of the monetary authority. It does not occur through the response of asset markets to fiscal policy actions.

Even if the rate of interest were allowed to increase, there is still the question of the investment response with respect to the rate of interest in developing countries. In this regard, it is common to find no significant relationship between real interest rates and investment–output ratios in cross-country studies (Agosin, 1996; Servén, 1998), or a modest effect (Greene and Villanueva, 1991; Solimano and Servén, 1993). This means that investment decisions in developing countries are not necessarily based on the same variables as in industrial countries. Analysts have concentrated much more attention on additional factors such as financial repression, shortage of foreign exchange, lack of infrastructure, institutional development and significant economic instability. Belloc and Vertova (2006) report a whole set of empirical studies where private investment is found to be sensitive to changes in public investment — regardless of econometric specification and samples. They report thirteen out of fourteen empirical studies in which this positive relationship is found.<sup>25</sup> In this so-called crowding-in hypothesis many channels in which public capital provides positive externalities on the private sector may be involved.<sup>26</sup> Belloc and Vertova (2006) summarize three of them: the favourable conditions for private decisions to invest created by the availability of economic and social infrastructures (transportation, communication, education, and so on); the increments in total factor productivity and the reductions in production costs; and finally, the positive effect on profit and sales expectations generated by a higher level of aggregate demand.

The second issue has to do with some practical considerations that may limit the use of discretionary fiscal policy in developing countries. While the discussion above underscores both the favourable impact of public investment on private capital accumulation and its relevance as a counter-cyclical tool, very often governments in developing countries find it difficult to implement a discretionary counter-cyclical fiscal policy. A combination of external volatility, budget endogeneity and political and institutional constraints undermines the capacity to carry out counter-cyclical fiscal policies. In this regard, it should be emphasized that counter-cyclical fiscal policy is sometimes very difficult to implement in financially open developing countries since under borrowing constraints an adverse external shock sometimes

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25. Additional studies for developing countries that find crowding-in effects include Blejer and Khan (1984); Easterly and Rebelo (1993); Erden and Holcombe (2005); Greene and Villanueva (1991); Gupta (1984); Hermes and Lensink (2001); Oshikoya (1994); Ramirez (2000); Ribeiro and Teixeira (2001); Servén (1996).
  26. As important as this crowding-in effect is the fact that carrying out public investment in periods when other private investment has temporarily declined is an effective way of dampening instability. Keynes' sharp distinction between stabilizing investment and stimulating consumption by counter-cyclical public action is quite relevant here.

requires a reduction of absorption making fiscal policy contractionary. Moreover, the tendency of debt service to increase during a crisis as a result of variations of interest rates and exchange rates in the face of external shocks, implies that primary fiscal spending (particularly investment) must adjust pro-cyclically to meet short-term fiscal targets.

In the discussion and definition of benchmarks of fiscal performance or fiscal targets, the budget deficit has held a role of great, even mythic, importance. The fiscal balance is supposed to be a useful indicator of 'macroeconomic health'. But note that this view may be misleading since fiscal policy is not evaluated against a background of insufficient aggregate demand. If, for instance, the budget deficit is larger simply because the economy is going through a recessionary phase of the business cycle (and tax revenue is consequently lower), thinking of fiscal policy as expansionary may be inappropriate and reducing fiscal expenditure to achieve a fiscal target may aggravate the recession. A pro-cyclical fiscal policy like this whose purpose is to secure a particular budget position does not necessarily lead to an environment of increasing confidence. Rather, investors can lose confidence when they see fiscal and monetary contraction leading the economy into a deeper recession. Thus, weak activity today tends to result in expectations of weak activity tomorrow, which lowers investment today and reduces tomorrow's potential supply. We will see below that the implications of this insight may be unattractive within the confines of the sustainability framework.

There are some additional problems with the use of the conventional fiscal balance as a measure of the fiscal stance. The lack of agreement about the measures of fiscal balance that should be used to judge the fiscal policy stance is one problem, but in addition, and as noted above, the fiscal balance itself may be endogenous. In developing countries, in particular, external disturbances as well as social and political tensions, all of which impact on the fiscal accounts through changes in interest rates, exchange rates and inflation rates, are sources of endogeneity in budgetary figures (Chand, 1991). Channels of influence also involve output fluctuations. Of course, if we accept that the overall fiscal balance is affected by factors to some extent beyond the control of fiscal authorities, then it will be difficult to view it as a target variable (as it may happen in many IMF-supported programmes).

A variant of the orthodox thinking recognizes output fluctuations as a source of endogeneity, but against the idea of using counter-cyclical discretionary fiscal policy to stabilize the economy it argues that the possible role that fiscal policy could play in stabilizing output may occur through the operation of automatic stabilizers. The popular view on automatic stabilizers relies on the assumption that fluctuations in GDP or income are partially smoothed by changes in taxes and transfers over the business cycle so that disposable income is less volatile than income. As the economy slides into a recession incomes are falling but collected income taxes also fall; unemployment is rising but transfers and payments of unemployment benefits also rise. In this setting automatic stabilizers have obvious appeal

as counter-cyclical policy instruments. They are supposed to be not subject to time inconsistency problems or implementation lags (unlike discretionary actions), and since they are not discretionary they are also less likely to affect market expectations adversely. It is also argued that automatic stabilizers are more effective in stabilizing output fluctuations because they are more predictable and, again unlike discretionary measures, they do not require political forecasting.

There are a number of factors that may account for the weak automatic stabilizers in developing countries. For example, automatic stabilizers may be constrained by the combination of low tax elasticity, relatively low share of taxes in GDP and lack of social security and unemployment benefits that move with the cycle. This tends to reduce the responsiveness of revenues and expenditures to economic shocks. Also, the impact of automatic stabilizers depends on how strongly consumption demand responds to changes in disposable income and this in turn may depend on the distribution of income. If income is concentrated on high-income groups, with low marginal propensity to consume, automatic stabilizers will be less effective in stabilizing the economy. They are relatively ineffective when the source of the shock to the economy is from the supply rather than the demand side and since they are backward-looking by nature, they are less useful in preventing a demand shock.

In sum the notion that the budget should always be in balance (or at least in balance on average over the business cycle) should be rejected on the grounds that the budget itself may be endogenous in developing countries. A balanced budget may create or enhance the pro-cyclical bias and it is generally not compatible with the achievement of high levels of aggregate demand. Moreover, the evaluation of fiscal policy should not start from the presumption that there would otherwise be adequate automatic stabilizers. Automatic stabilizers may not do the right job in developing countries. Hence, if fiscal policy is seen as a measure to secure a desired level of economic activity rather than to achieve a particular budget target, there may be circumstances and contexts where discretionary counter-cyclical fiscal policy — whose goal is to close the output gap — could be a far better candidate for the stabilization job. This was, for instance, widely recognized in Southeast Asian economies, where the recession that followed the Asia crisis was attacked with expansionary fiscal policy (Jansen, 2002).

Of course against the pro-cyclical bias and to keep fiscal policy vehicles tuned it is perhaps convenient to adopt new institutional structures that make it easier to pull them out and take them for a spin when needed. Macro fiscal rules, stabilization funds and reform of budgetary institutions are intuitively attractive solutions to some of these problems. But despite progress in these areas, these institutional mechanisms are not always well designed to smooth business cycles and perfect enforcement is rarely the environment in which they are applied.

For example, regarding the implementation of recent fiscal rules, Martner (2001) points out that the recently implemented fiscal rules in Latin American countries tend to focus on goals that look no further than the budgetary cycle so that insufficient weight is given to the principles of full employment and output stability (as the authorities' ability to react to recessionary situations is removed). Adam and Bevan (2006) also find that in sub-Saharan Africa new budgetary rules have limited the ability of governments to run counter-cyclical fiscal policy. The adoption of a 'fiscal policy rule', in which authorities respond to output fluctuations through a fiscal policy reaction function may be considered as an alternative (Budnevich, 2002; Taylor, 2000), so long as it emphasizes full employment (Arestis and Sawyer, 2004b). Stabilization funds are often championed as an option for stabilizing the cycle. However, in countries with strong pressures to spend, and high 'social deficits', the surpluses in these funds might be difficult to sustain politically during goods times. Although reforms of budgetary institutions can change and influence the incentives that the players (in the fiscal game) have over the cycle, they may fail specifically when they give more power to the executive. Hierarchical budget procedures that give more power to the executive *vis-à-vis* the legislature may exacerbate political business cycles since more powerful incumbent politicians in the executive may hope to stimulate the economy just prior to an election and thereby greatly improve their own and their party's re-election chances (Braun and di Gresia, 2003). What seems to be clear is that any type of analysis and solution are still at an early stage.

## DEBT SUSTAINABILITY

Debt sustainability has become one of the most used and abused concepts in recent discussions regarding international financial issues and fiscal policy in developing countries. Debt sustainability became important in a number of developing countries, where the advent of the debt crisis in the early 1980s as well as the high ratios of public debt to GDP caused by the aftermath, set the scene for the emergence of new views on deficits, debt and fiscal sustainability. Indeed, as Perry (2003) remarked, much of the discussion on fiscal policy in Latin American countries centred on long-term sustainability issues.

The best known concept of fiscal sustainability relates to the government's ability to indefinitely maintain the same set of policies (regarding taxes and expenditure, for instance) while remaining solvent. This means that the focus of fiscal sustainability analysis is often not on defaulting itself — which governments usually try to avoid — but on the consequences of the policy changes needed to prevent defaulting. Thus, a sustainability condition makes any stable path of the primary deficit consistent with a stable public debt to GDP ratio.

Discussions of debt financing from a long-term perspective have followed two main approaches (Cuddington, 1996): (a) the so-called accounting or Domar’s approach; and (b) the solvency criterion of government finances or the Present Value Constraint (PVC) approach.<sup>27</sup> Independently of the conceptual approach used, however, the fundamental building block of the fiscal sustainability analysis today corresponds to a simplification of the government budget constraint that derives from the second column of Table 1. The government borrowing constraint for period  $t$  is typically written as a percentage of nominal GDP as

$$(G + r_t B_{t-1} - T) = (B_t - B_{t-1}) \tag{22}$$

But note from (22) that public investment and money finance are ignored. In the absence of money finance, the government budget deficit must be financed by new debt creation.

In order to analyse the evolution of the debt-to-GDP ratio we compute now the total derivative of  $\frac{B_t}{Y_t}$  (the ratio of debt to nominal income):

$$\Delta \left( \frac{B_t}{Y_t} \right) = \frac{\Delta B_t}{Y_t} - \frac{B_t}{Y_t} \frac{\Delta Y}{Y_t} \tag{23}$$

If we call  $b_t = \frac{B_t}{Y_t} = \frac{B_t}{p_t y_t}$  and apply  $\frac{\Delta Y_t}{Y_{t-1}} = [g_t + \pi_t(1 + g_t)]$  and  $\pi_t g_t \approx 0$ , we may rewrite (23) as

$$\Delta b_t = \frac{\Delta B_t}{Y_t} - b_t(\pi_t + g_t) \tag{24}$$

where  $\pi_t$  stands for the rate of inflation and  $g_t$  for real GDP growth. Substituting (24) into (22) we have

$$\Delta b_t = \frac{G_t - T_t + r B_{t-1}}{p_t y_t} - b_t(\pi_t + g_t) \tag{25}$$

Let us denote  $\phi = \frac{G_t}{p_t y_t}$ , and  $\tau = \frac{T_t}{p_t y_t}$ , then we have in terms of ratios to GDP:

$$\Delta b_t = (\phi - \tau) + \frac{r B_{t-1}}{p_t y_t} - b_t(\pi_t + g_t) \tag{26}$$

Assuming steady state debt ratios, using the definition for the real rate of interest on debt ( $i = r - \pi$ ) and rearranging we have

$$\Delta b_t = (i - g)b_{t-1} - (\tau - \phi) \tag{27}$$

It follows immediately that if the primary surplus ratio ( $\tau - \phi$ ) is equal to zero, the debt/GDP ratio will grow (or shrink) at the rate  $i - g$ .<sup>28</sup> Under this

27. The main difference between the accounting and the PVC approach is that the former is more explicit regarding the role that lenders ultimately play in determining which debt strategies are ‘sustainable’ and which are not.  
 28. The reader may note that in this conventional analysis of sustainability it is assumed that there is a level  $b^T$  beyond which the ratio  $b = B/py$  cannot or should not rise.

situation, the Domar's condition for debt stability (and fiscal sustainability) can be held when the growth rate in real GDP,  $g$ , is higher than the real interest rate,  $i$ , even if the primary balance continues to be just zero. Otherwise, the debt to GDP ratio will continue to rise without limit and 'when the public recognizes the unsustainability of the government fiscal policy, it will cease buying government debt and thereby force a change in policy' (Fischer and Easterly 1990: 135).

A first basic problem with the conventional sustainability framework as applied to developing countries is that it again assigns an active role to budget deficits. Take for instance the problems associated with high and explosive debt/GDP ratios. What measures can be taken to control it? An obvious answer is the control of government expenditure. However, as Jha (1994) notes, this may not be as simple as it first looks. Reducing government expenditure may lower real national income and then tax revenues and exacerbate the debt situation. Thus, using sustainability targets to correct the size of the primary balance,  $(\tau - \phi)$ , (to avoid default) may not be such a good idea since government spending cuts may be self-defeating.

Further, assuming that  $g$  and  $i$  remain unaffected irrespective of the government's fiscal stance may not be correct at all. This presumed constancy of  $g$  and  $i$  is somewhat compatible with the steady state assumption. But in the absence of the steady state, the debt-to-GDP ratio does not need to be constant in order for sustainability to hold and there may be many paths for debt that satisfy (27) (see Burnside, 2004). Indeed in all plausible mainstream models of long-term growth, the fiscal programmes, through their impact on factor productivity, saving and investment, will affect  $g$  or  $i$  or both. Independently of the importance of supply issues, the emphasis of mainstream growth theory on potential output tends to ignore the fact that outputs in developing countries may stay below their maximum levels for long periods of time. In this case growth may be demand-led not just because of its chronic influence on the utilization rates of productive resources but also because of its impact on the potential output path itself. Under these circumstances the stability of  $g$  and  $i$  is weakened even without productivity effects. Thus a major step that needs to be taken in order to improve the analysis concerns factoring in the effects of fiscal instruments on the long-run behaviour of the economy, especially those on the growth rate and interest rate.<sup>29</sup>

The reader may also note that a monetized deficit does not figure as a source of financing public expenditure in (22). However, since many developing country governments have tapped this source, it appears important to examine its role for sustainability in a growing economy. When seigniorage is included as a source of financing public expenditure, (25) assumes the following form

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29. Rakshit (2005) provides some appealing ideas though in the framework of a neo-classical growth model.

$$\Delta b_t = \frac{G_t - T_t + rB_{t-1}}{p_t y_t} - \frac{\Delta M}{p_t y_t} - b_t(\pi_t + g_t) \tag{28}$$

Define the inverse of velocity as  $\frac{1}{v_t} = \frac{M_t}{p_t y_t}$  and since we know that  $m = \frac{\Delta M}{M_t}$ , then equation (27) is modified to

$$\Delta b_t = (i - g)b_{t-1} - (\tau - \phi) - \frac{m}{v_t} \tag{29}$$

From (29) it is clear that seigniorage stands on the same footing as taxes. Moreover, an increase in the demand for money as represented as a decrease in income velocity,  $v_t$ , makes the Domar’s condition weaker. Thus, in a growing economy the government can not only secure seigniorage without any inflationary impact, but through seigniorage revenue can reduce the burden of servicing the public debt.<sup>30</sup>

The conventional Domar’s sustainability condition can be further modified if government expenditure gives rise to additional revenue in the future. The analysis of the previous section highlighted the potential importance that public investment may have in developing countries both as a stimulus for private investment and as a counter-cyclical tool. However, public investment can also affect the sustainability of the fiscal stance since it produces a return. In developing countries, development finance — that is, the accumulation of public debt that arises from the need to finance large expenditure on infrastructure — would perhaps be justified provided that the expected rate of return of the development projects exceeds the cost of borrowing. The above implies that the government budget constraint in column 2 of Table 1 needs to take into account the net revenue generated by public capital investment. Of course, returns on government investment can fall short of the borrowing rate of interest, but this does not justify its exclusion from the government budget constraint. In order to appreciate the sustainability implications of public investment note that expression (25) is now

$$\Delta b_t = \frac{G_t - T_t + rB_{t-1}}{p_t y_t} + \left( \frac{I_g}{p_t y_t} - \frac{r_g K_g}{p_t y_t} \right) - \frac{\Delta M}{p_t y_t} - b_t(\pi_t + g_t) \tag{30}$$

where  $r_g K_g$  is the revenue generated by public capital stock. We call  $\delta$  the term in parentheses and thus rewrite expression (29) by

$$\Delta b_t = (i - g)b_{t-1} - (\tau - \phi - \delta) - \frac{m}{v_t} \tag{31}$$

Hence, if  $\delta < 0$ , then fiscal sustainability improves and the conventional Domar’s condition is, once again, modified.

In developing countries, where the public sector frequently holds significant assets (buildings, infrastructure, mineral deposits, and various forms of liquid reserves), changes in net worth could potentially be very different from

30. We should note, however, that seigniorage may be more important as a source of temporary increase in revenue than as a steady state phenomenon.

changes in gross debt. We may also highlight the role of foreign borrowing in financing public sector deficits, or the importance of contingent liabilities, or the contribution of concessional lending and grants to fiscal finance. This means that ideally, a better assessment of public debt sustainability should be based on an analysis of the balance sheet of the public sector, defined as comprehensively as possible. Such an approach would explicitly recognize that, for the purpose of long-term sustainability, the focus should be on current and expected future changes in public sector net worth rather than gross debt.

## CONCLUSIONS

Within the context of developing countries, this article has reviewed and assessed the literature on the relationship between fiscal imbalances and macroeconomic targets. In discussing the implications of this relationship for fiscal policy, it is important to incorporate the perceived nature of the economy and its institutional structure as well as the resulting causal mechanisms. This study has clarified some common misunderstandings and has found the conventional arguments against fiscal activism to be wanting. These considerations are of the utmost importance not only for the developing economies but for the developed countries as well. Although a proper accounting framework is essential for disentangling the stance, macroeconomic nature and impacts of fiscal policy, it should serve to present not only mainstream arguments but also more plausible alternatives such as the Keynesian/Structuralist approach, developed by economists in the South, which does not follow a one-size fits all approach.

We have seen, for instance, that a conceptually complete discussion of the relationship between budget deficits and the external balance goes beyond the twin deficit hypothesis and needs to cover the possible reversing of the orthodox causal link. The experience of developing countries also indicates that fiscal deficits may respond to, rather than cause, changes in the current and capital account. It may happen that the foreign account is balanced while the deficit has to match the borrowing of the private sector. Thus, misconceptions about the proper closure of the economy may lead to restrictive fiscal policy (when this is not needed), which reinforces recessionary trends, feeds negative expectations and prevents the anticipated fall in country risk premium.

We have also found support for the idea that the unidirectional causation from deficits to inflation (which derives from this orthodox approach) is contingent on a set of very limiting assumptions which are seldom questioned. To the extent that the exogeneity of output is due to the neoclassical assumption of full employment growth, this story has all the possible defects of the neoclassical model. A larger budget deficit that translates into a larger money stock does not need to lead to inflation if the long-run steady state effects

of fiscal policy on growth are positive and there are reasons to believe that the path of aggregate demand may itself influence the supply-side potential of the economy, especially when active fiscal policy is supported by public investment in infrastructure. In the inflationary finance story, seigniorage and inflation do not display a simple relationship in developing countries. Often forgotten, inflationary finance will exist insofar as a flexible exchange rate system is assumed. But one important and additional difficulty with the canonical inflationary finance approach is that it leaves unanswered the prior question about what produces the fiscal deficit in the first place. It may be important to acknowledge the role that latent domestic distributive conflicts and tensions generated in the international arena (beyond the fiscal sphere) play in the behaviour of fiscal and monetary variables.

Developing countries need to correct their overwhelmingly pro-cyclical fiscal policy bias, since this greatly augments the instability of macroeconomic outcomes. The current view, which undermines the effectiveness of fiscal policy in stimulating economic activity in developing countries is not entirely correct right, and I have argued here that policy makers might do well to pay close attention not just to the level of government expenditures but also to its composition between consumption and investment goods. The empirical evidence collected in developing countries strongly supports the positive relationship between public and private investment. Moreover, output stabilization by increasing public investment is quite relevant here and should not be relegated to the dustbin of history. The present orthodoxy which emphasizes the importance of budget deficit targets does not have any merit at all. While it is possible, in principle, to control the volume of government spending or taxation to some extent, the same is not true for the budget deficit and fiscal targets since other macroeconomic variables affected by government discretionary measures will in turn modify the budget balance in an ex-post way. For similar reasons, the aim of using sustainability targets to correct the size of the primary balance (to avoid default) may be misguided. Assuming that the rate of growth of the economy and the real interest rates remain unaffected, irrespective of the government's fiscal stance, may be inaccurate and government spending cuts (to achieve a budget target) may in fact be self-defeating.

## REFERENCES

- Adam, C. and D. Bevan (2003) 'Fiscal Deficits and Growth in Developing Countries'. Oxford: University of Oxford, Department of Economics (mimeo).
- Adam, C. and D. Bevan (2006) 'Fiscal Policy in Low-income Countries', in T. Addison and A. Roe (eds) *Fiscal Policy for Development*, pp. 46–71. New York: Palgrave Macmillan.
- Agosin, M. (1996) 'Relación de dos Regiones: La inversión en la América Latina y en el Asia Oriental' ('Two Regions Relations: Investment in Latin America and East Asia'), *El Trimestre Económico* 63: 1139–69.

- Aizenman, J. (1992) 'The Competitive Externalities and the Optimal Seigniorage', *Journal of Money, Credit and Banking* 24(1): 61–71.
- Alexander, S. (1952) 'Effects of a Devaluation on a Trade Balance', *IMF Staff Papers* 2(2): 263–78.
- Anoruo, E. and S. Ramchander (1998) 'Current Account and Fiscal Deficits: Evidence from Five Developing Economies of Asia', *Journal of Asian Economics* 9(3): 487–501.
- Arce, D. (1994) 'Fiscal Policy and the Theory of Conflict Inflation', *The Manchester School* 63(4): 425–37.
- Arce, D. (1999) 'Interpreting Budget Deficits in Latin America: The Methods with Application to Argentina', *Cambridge Journal of Economics* 23(1): 21–32.
- Arestis, P. and M. Sawyer (2004a) 'On Fiscal Policy and Budget Deficits', *Intervention – Journal of Economics* 1(2): 65–78.
- Arestis, P. and M. Sawyer (2004b) 'Fiscal Policy: A Potent Instrument', *The New School Economic Review* 1(1): 21–32.
- Arida, P. and A. Lara Resende (1985) 'Recessao e Tasa de Juros: o Brasil nos primordios da decada de 1980' ('Recession and Interest Rates: Brazil at the Beginning of the 1980s'), *Revista de Economia Politica* 5(1): 5–20.
- Arize, A. and J. Malindretos (2008) 'Dynamic Linkages and Granger Causality between Trade and Budget Deficits: Evidence from Africa', *African Journal of Accounting, Economics, Finance and Banking Research* 2(2): 2–19.
- Bacha, E. (1987) 'IMF Conditionality: Conceptual Problems and Policy Alternatives', in S. Dell (ed.) *The International Monetary System and its Reform, Part V*, pp. 751–8. New York: North-Holland.
- Bacha, E. (1990) 'A Three-Gap Model of Foreign Transfers and the GDP Growth Rate in Developing Countries', *Journal of Development Economics* 32(2): 279–96.
- Bacha, E. (1992) 'External Debt, Net Transfers, and Growth in Developing Countries', *World Development* 20(8): 1183–92.
- Barro, R. (1989) 'The Ricardian Approach to Budget Deficits', *Journal of Economic Perspectives* 3(2): 37–54.
- Bello, M. and P. Vertova (2006) 'Public Investment and Economic Performance in Highly Indebted Poor Countries: An Assessment', *International Review of Applied Economics* 20(2): 151–71.
- Blanchard, O. (1985) 'Debt, Deficits and Finite Horizons', *Journal of Political Economy* 93(2): 223–47.
- Blejer, M. and M. Khan (1984) 'Government Policy and Private Investment in Developing Countries', *IMF Staff Paper* 31(2): 379–403.
- Braun, M. (2001) 'Why is Fiscal Policy Procyclical in Developing Countries?'. Cambridge, MA: Harvard University (mimeo).
- Braun, M. and L. di Gresia (2003) 'Towards Effective Social Insurance in Latin America: The Importance of Countercyclical Fiscal Policy'. RES Working Paper No 4334. Washington, DC: Inter-American Development Bank.
- Bresser-Pereira, L. (1990) 'The Perverse Logic of Stagnation: Debt, Deficit and Inflation in Brazil', *Journal of Post Keynesian Economics* 12(4): 503–18.
- Bruno, M. and S. Fischer (1990) 'Seigniorage, Operating Rules and the High Inflation Trap', *The Quarterly Journal of Economics* 105(2): 354–74.
- Budnevich, C. (2002) 'Countercyclical Fiscal Policy: Review of the Literature, Empirical Evidence and Some Policy Proposals'. Discussion Paper No 2002/41. Helsinki: World Institute of Development Economics Research.
- Burnside, C. (2004) 'Assessing New Approaches to Fiscal Sustainability Analysis'. Written for the World Bank Latin American and Caribbean Department's Report on Debt and Sustainability Analysis. Washington, DC: The World Bank.
- Camara, A. and M. Vernengo (2004) 'Fiscal Policy and the Washington Consensus: A Post Keynesian Perspective', *Journal of Post Keynesian Economics* 27(2): 333–43.

- Cardoso, E. (1991) 'De la Inercia a la Megainflación: El Brasil en los años ochenta' ('From Inertia to Mega-inflation: Brazil in the Eighties'), *Trimestre Económico* 63(229): 163–97.
- Cardoso, E. (1992) 'Deficit Finance and Monetary Dynamics in Brazil and Mexico', *Journal of Development Economics* 37(3): 173–97.
- Chakraborty, L. (2002) 'Fiscal Deficit and Rate of Interest Link in India: An Econometric Analysis of Deregulated Financial Regime', *Economic and Political Weekly* 38(19): 11–17.
- Chand, S. (1991) 'Fiscal Impulse Measures and Their Fiscal Impact', in M. Blejer and A. Cheasty (eds) *How to Measure the Fiscal Deficit*, pp. 85–99. Washington, DC: International Monetary Fund.
- Chowdhury, K. (2004) 'Deficit Financing in LDCs: Evidence From South Asia'. Working Paper 04-18, Department of Economics. Wollongong, NSW: University of Wollongong.
- Corbo, V. and K. Schmidt-Hebbel (1991) 'Public Policies and Saving in Developing Countries', *Journal of Development Economics* 36(1): 89–115.
- Cuddington, J.T. (1996) 'Analyzing the Sustainability of Fiscal Deficits in Developing Countries'. Washington, DC: Georgetown University, Economics Department (mimeo).
- Dalamagas, B. (1992) 'Testing Ricardian Equivalence: A Reconsideration', *Applied Economics* 24(1): 59–69.
- Damil, M., B. Frenkel and M. Rapetti (2005) 'The Argentinean Debt: History, Default and Restructuring'. Paper prepared for the Project "Sovereign Debt" of the Initiative for Policy Dialogue (IPD). New York: Columbia University.
- Dornbusch, R. and M.H. Simonsen (1987) 'Estabilización de la inflación con el apoyo de una política de ingresos' ('Inflation Stabilization with Incomes Policy Support'), *El Trimestre Económico* 54(2): 225–8.
- Dutt, A. (1996) 'The Role of Keynesian Policies in Semi-industrialized Countries: Theory and Evidence from India', *International Review of Applied Economics* 10(1): 127–40.
- Easterly, W. and S. Rebelo (1993) 'Fiscal Policy and Economic Growth', *Journal of Monetary Economics* 32(3): 417–58.
- Easterly, W. and K. Schmidt-Hebbel (1991) 'The Macroeconomics of the Public Sector. A Synthesis'. Working paper WPS 775. Washington, DC: The World Bank, Country Economic Department.
- Eatwell, J. and L. Taylor (1998) 'International Capital Markets and the Future of Economic Policy'. Working Paper No 9. New York: New School for Social Research, Center for Economic Policy Analysis.
- Edwards, S. (1995) 'Why are Saving Rates so Different across Countries? An International Comparative Analysis'. NBER Working Paper W5097. Cambridge, MA: National Bureau of Economic Research.
- Erden, L. and R. Holcombe (2005) 'The Effects of Public Investment on Private Investment in Developing Economies', *Public Finance Review* 33(5): 575–602.
- Eyzaguirre, N. (1989) 'Saving and Investment under External and Fiscal Constraints', *ECLAC Review* 38: 47.
- Fanelli, J.M., R. Frenkel and C. Winograd (1987) 'Argentina'. Stabilization and Adjustment Policies and Programmes Study No 12. Helsinki: WIDER.
- Fazzari, S. (1994) 'Why Doubt the Effectiveness of Keynesian Fiscal Policy?', *Journal of Post Keynesian Economics* 17(2): 231–48.
- Fischer, S. and W. Easterly (1990) 'The Economics of the Government Budget Constraint', *The World Bank Observer* 5(2): 127–42.
- FitzGerald, V. (2000) 'Capital Surges, Investment Instability and Income Distribution after Financial Liberalisation', in W. Mahmud (ed.) *Adjustment and Beyond: The Reform Experience in South Asia*, pp. 123–46. New York: Palgrave.
- Fraga, A. and S. Werlang (1983) 'Uma Visao da Inflacao como Conflictivo Distributivo' ('A View of Inflation as a Distributive Conflict'), *Revista Brasileira de Economia* 37(3): 361–8.
- Gavin, M. and R. Perotti (1997) 'Fiscal Policy in Latin America', in B. Bernanke and J. Rotemberg (eds) *NBER Macroeconomics Annual 1997*, pp. 11–60. Cambridge, MA: MIT Press.

- Gemmell, N. (2001) 'Fiscal Policy in a Growth Framework'. Discussion Paper No 2001/84. Helsinki: UNU-WIDER.
- Giorgioni, G. and K. Holden (2003) 'Does the Ricardian Equivalence Proposition Hold in Less Developed Countries?', *International Review of Applied Economics* 17(2): 209–21.
- Greene, J. and D. Villanueva (1991) 'Private Investment in Developing Countries: An Empirical Analysis', *IMF Staff Papers* 38(1): 33–58.
- Gupta, K. (1984) *Finance and Economic Growth in Developing Countries*. London: Croom Helm.
- Haque, N. (1988) 'Fiscal Policy and Private Saving Behavior in Developing Countries', *IMF Staff Papers* 35(2): 316–35.
- Haque, N. and P. Montiel (1989) 'Consumption in Developing Countries: Tests for Liquidity Constraints and Finite Horizons', *Review of Economics and Statistics* 71(3): 408–15.
- Hermes, N. and R. Lensink (2001) 'Fiscal Policy and Private Investment in Less Developed Countries'. Discussion Paper No. 2001/3. Helsinki: UNU/WIDER.
- Heymann, D., F. Navajas and I. Warnes (1991) 'Conflicto Distributivo y Deficit Fiscal: Algunos juegos inflacionarios' ('Distributive Conflict and Fiscal Deficit: Some Inflationary Games'), *Trimestre Económico* 63(229): 101–37.
- Islam, M. (1998) 'Brazil's Twin Deficits: An Empirical Examination', *Atlantic Economic Journal* 26(2): 121–28.
- Jansen, K. (2002) 'The Scope for Fiscal Policy, with examples from Thailand'. Working Papers No 369. The Hague: Institute of Social Studies.
- Jha, R. (1994) *Macroeconomics for Developing Countries*. London: Routledge.
- Kaminsky, G., C. Reinhart and C. Vegh (2004) 'When it Rains, it Pours: Pro-cyclical Capital Flows and Macroeconomic Policies'. NBER Working Paper 10780. Cambridge, MA: National Bureau of Economic Research.
- Khalid, A. (1996) 'Ricardian Equivalence: Empirical Evidence from Developing Countries', *Journal of Development Economics* 51(2): 413–32.
- Kouassi, E., M. Mougoué and K.O. Kymn (2004) 'Causality Tests of the Relationship between the Twin Deficits', *Empirical Economics* 29(3): 503–25.
- Lavoie, M. (2000) 'Government Deficits in Simple Kaleckian Models', in H. Bougrine (ed.) *The Economics of Public Spending: Debts, Deficits and Economic Performance*, pp. 122–34. Cheltenham: Edward Elgar.
- Lopez, H.J., K. Schmidt-Hebbel and L. Servén (2000) 'How Effective is Fiscal Policy in Raising National Saving?', *Review of Economics and Statistics* 82(2): 226–38.
- Mansouri, B. (1998) 'Fiscal Deficits, Public Absorption and External Imbalances: An Empirical Examination of the Moroccan Case'. ERF Working Paper Series. Cairo: Commission of the European Community.
- Martner, R. (2001) 'Managing in the Public Sector for Investment and Growth', *ECLAC Review* 74: 19–34.
- Miller, S. and F. Russek (1997) 'Fiscal Structures and Economic Growth: International Evidence', *Economic Inquiry* 35(3): 603–13.
- Mondino, G., F. Sturzenegger and M. Tommasi (1996) 'Recurrent High Inflation and Stabilization: A Dynamic Game', in F. Sturzenegger and M. Tommasi (eds) *The Political Economy of Reform*, pp. 145–64. Massachusetts, MA: MIT Press.
- Mundell, R. (1962) 'The Appropriate Use of Monetary and Fiscal Policy under Fixed Exchange-Rates', *IMF Staff Papers* 9(2): 70–79.
- Mundell, R. (1963) 'Capital Mobility and Stabilization Policy under Fixed and Flexible Exchange Rates', *Canadian Journal of Economics and Political Science* 29(4): 475–85.
- Muradoglu, G. and F. Taskin (1996) 'Differences in Household Savings Behavior: Evidence from Industrial and Developing Countries', *The Developing Economies* 34(2): 138–53.
- Olivera, J. (1967) 'Money, Prices, and Fiscal Lags: A Note on the Dynamics of Inflation', *Banca Nazionale del Lavoro Quarterly Review* 20(28): 258–67.

- Onafowora, O. and A. Owoye (2006) 'An Empirical Investigation of Budget and Trade Deficits: The Case of Nigeria', *The Journal of Developing Areas* 39(2): 153–74.
- Oshikoya, T.W. (1994) 'Macroeconomic Determinants of Domestic Private Investment in Africa: An Empirical Analysis', *Economic Development and Cultural Change* 42(3): 573–96.
- Palley, T. (1996) 'The Saving–Investment Nexus: Why it Matters and How it Works'. CEPA Working Paper Series II No 1. New York: New School for Social Research, Center for Economic Policy Analysis.
- Perry, G. (2003) 'Can Fiscal Rules Help Reduce Macroeconomic Volatility in the Latin America and Caribbean Region?'. Policy Research Working Paper 3080. Washington, DC: The World Bank.
- Rakshit, M. (1989) 'Effective Demand in a Developing Country: Approaches and Issues', in M. Rakshit (ed.) *Studies in the Macroeconomics of Developing Countries*, pp. 1–25. New Delhi: Oxford University Press.
- Rakshit, M. (2001) 'Contentious Issues in Fiscal Policy: A Suggested Resolution', *Money and Finance* Oct–Dec: 23–60.
- Rakshit, M. (2005) 'Budget Deficit: Sustainability, Solvency and Optimality', in A. Bagchi (ed.) *Readings in Public Finance*, pp. 339–80. New Delhi: Oxford University Press.
- Ramirez, M.D. (2000) 'The Impact of Public Investment on Private Investment Spending in Latin America: 1980–95', *Atlantic Economic Journal* 28(2): 210–26.
- Raut, L. and A. Virmani (1989) 'Determinants of Consumption and Savings Behavior in Developing Countries', *The World Bank Economic Review* 3(3): 379–93.
- Ribeiro, M. and J. Teixeira (2001) 'An Econometric Analysis of Private-sector Investment in Brazil', *ECLAC Review* 74: 164–76.
- Schydrowsky, D. (1982) 'Alternative Approaches to Short-Term Economic Management in Developing Countries', in T. Killick (ed.) *Adjustment and Financing in the Developing World*, pp. 101–35. Washington, DC: IMF/ODI.
- Servén, L. (1996) 'Does Public Capital Crowd Out Private Capital? Evidence from India'. World Bank Policy Research Working Paper No 1613. Washington, DC: The World Bank.
- Servén, L. (1998) 'Macroeconomic Uncertainty and Private Investment in LDCs: An Empirical Investigation'. World Bank Policy Research Working Paper No. 2035. Washington DC: The World Bank.
- Solimano, A. and L. Servén (1993) 'Economic Adjustment and Investment Performance in Developing Countries: The Experience of the 1980s', in L. Servén and A. Solimano (eds) *Striving for Growth after Adjustment. The Role of Capital Formation*, pp. 147–79. Washington, DC: The World Bank.
- Steindl, J. (1979) 'Stagnation Theory and Stagnation Policy', *Cambridge Journal of Economics* 3(1): 1–14.
- Steindl, J. (1982) 'The Role of Household Saving in the Modern Economy', *Banca Nazionale Del Lavoro Quarterly Review* 140: 69–88.
- Tanzi, V. (1977) 'Inflation, Lags in Collection, and the Real Value of Tax Revenue', *IMF Staff Papers* 24: 154–67.
- Tanzi, V. (1978) 'Inflation, Real Tax Revenue, and the Case for Inflationary Finance: Theory with Application to Argentina', *IMF Staff Papers* 25: 417–51.
- Tanzi, V. (1986) 'Fiscal Policy Responses to Exogenous Shocks in Developing Countries', *American Economic Review* 76(2): 88–91.
- Taylor, J. (2000) 'Reassessing Discretionary Fiscal Policy', *Journal of Economic Perspectives* 14(3): 21–36.
- Taylor, L. (1991a) *Income Distribution, Inflation and Growth*. Cambridge, MA: MIT Press.
- Taylor, L. (1991b) 'Fiscal Issues in Macroeconomic Stabilization: A Structuralist Perspective', *Ricerche Economiche* 44: 197–213.
- Taylor, L. (1994) 'Gap Models', *Journal of Development Economics* 45(1): 17–34.
- Taylor, L. (1998) 'Lax Public Sector, Destabilizing Private Sector: Origins of Capital Market Crises'. CEPA Working Papers 1998–11. New York: New School for Social Research, Center for Economic Policy Analysis.

- Velasco, A. (1987) 'A Model of Endogenous Fiscal Deficits and Delayed Fiscal Reforms'. NBER Working Paper Series No 6336. Cambridge, MA: National Bureau of Economic Research.
- Vera, L. (2005) 'Macroeconomic Adjustment under an External and Fiscal Constraint: A Fix-price/Flex-price Approach', *Metroeconomica* 56(1): 126–56.

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