Recurrent Expenditure Commitment, External Imbalance, Devaluation and Inflation in the Developing Economies*

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I. Introduction

Government recurrent expenditure financing has been a major problem for developing countries in recent years (Heller, 1975, 1979). The expenditures are required for meeting the domestic and foreign exchange costs of inputs into government production. In addition, these economies have been faced by inflation and external deficit problems. For the most part, governments in these countries may find it impossible to cut spending commitments without provoking social and political unrest.

Generally, policies designed to confront these problems assign less importance to the recurrent expenditure problem. Such policies tend to include devaluation and other "liberalization" measures focussed on the external sector.

However, there is pessimism about the efficacy of currency devaluation for stabilization in the developing economies. On the one hand, developing country officials have been inclined to attribute balance of payments difficulties to "structural" factors, and to claim that exchange rate adjustments increase inflation by generating increases in the prices of imported goods.

On the other hand, both "Keynesian" and "Monetarist" analysis of balance of payments imply the necessity for economic

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(2) $C_t = X(e,m,Y),\ X_e < 0, X_m > 0, X_y > 0$

(3) $Y_{nt} = g(e,a),\ g_e < 0, g_a > 0$

(4) $C_{nt} = Z(e,m,Y),\ Z_e > 0,\ Z_m > 0,\ Z_Y > 0$

(5) $m_d = h(Y),\ h_y > 0$

(6) $M = ER + D$

(7) $Y = Y_{nt} + eY_t$

(8) $e = (E/P_{nt})$

(9) $a = (P_{nt}/W)$

(10) $m = (M/P_{nt})$

The analytical framework postulates a developing country with rudimentary financial institutions. The economy produces two types of goods: traded goods Y_t and nontraded goods Y_{nt}, with prices P_t and P_{nt}. The price of traded goods is determined by the world price P_w and the nominal exchange rate E. If P_w is assumed to be unity, then $Pt = E$; e is the real exchange rate, and t and nt stand for traded and nontraded goods respectively.

Transactors in the economy demand traded goods C_t, nontraded goods C_{nt} and real money balances m^d. Nominal money stock M has two components, namely external reserves R and domestic credit D. Recurrent expenditure commitments compel the government to use expansion in D for financing the budget.

The economy uses labour in production. The nominal wage rate is W and the supply price of goods per wage cost is the inverse of the real wage rate a. Equations (1) to (6) describe the system, and equations (7) to (10) are definitions.

It makes no difference to the results to assume that all D, or a significant fraction of it is used to finance the government expenditure commitment to traded goods. Given a fixed exchange rate, *ceteris paribus*, the growth of D will reduce reserves. The amount of external imbalance due to domestic credit creation would be equal to the foreign exchange value of the excess of money supply over money demand.

Consider the case where the supply responses to devaluation are $g_e<0$, $g_a>0$, $f_e>0$, $f_a>0$ such that there is expansion in total output (i.e., $\frac{dY}{de}$, Y_a, $Y_e>0$). The expansion of output is plausible when the devaluation expected to correct for price distortions, resource misallocation and underemployment, and the relatively low labour intensity of production which are inherent in the maintenance of an overvalued exchange rate (Steel, 1972; Balassa, 1981, 1984).

Given $g_e<0$ and $Z_e>0$ in e, Y_{nt} space, then for a rise in P_{nt} to be consistent with the expansion of output, it is sufficient from (14) that:

$$(15)\ Z_Y \frac{dY}{de} \geqslant g_a \frac{da}{de}$$

Similarly in the traded goods sector, for the devaluation to reduce the external imbalance, it is sufficient that:

$$(16)\ X_Y \frac{dY}{de} \leqslant f_a \frac{da}{de}$$

The left hand sides of (15) and (16) represent the additional expenditures on each sector due to the spill-over effects of income expansion induced by the devaluation; and the right hand sides represent the additional expansion in the output of each sector due to the devaluation. From (14), (15) and (16) we have:

$$(17)\ \frac{dm}{de}(nt)<0$$

$$(18)\ \frac{dm}{de}(t)>0$$

$$(19)\ \frac{dm}{de}>0$$

The equilibrium curves for all the three sectors are brought together in figure 1. HH represents the nontraded goods sector; mm is the money sector, and BB is the external trade sector.

As shown in figure 1, there is equilibrium at A. An expansion of D will require a higher real exchange rate for external

tion ($\frac{dY}{de}, Y_e, Y_a = 0$), or total output contracts with the devaluation ($\frac{dY}{de}, Y_e, Y_a < 0$). Output insensitivity to devaluation is often rationalized by the assumption of full employment. In the other case, though this is not introduced explicitly into the model, output contraction with devaluation is often explained by the rises in the prices of imported inputs required for production. Table 1 describes the shape of each equilibirum curve under these alternative situations. The relevant situation for a country depends on the state of the economy.

From table 1 when output remains insensitive to devaluation, the shape of the equilibrium curves remains the same except for the money sector where $\frac{dm}{de} = 0$ (figure 2). In this case, devaluation must be accompanied by a fixed real money stock in order to have monetary equilibrium.

$$\begin{bmatrix} \frac{dm}{de}(nt) \\ \frac{dm}{de}(t) \\ \frac{dm}{de} \end{bmatrix} = \begin{bmatrix} (g_e - Z_e)/Z_m < 0 \\ (f_e - X_e)/X_m > 0 \\ h_Y(Y_e + Y_a \frac{dY}{de}) = 0 \end{bmatrix} \left(\frac{dY}{de}, Y_e, Y_a = 0\right)$$

$$= \begin{bmatrix} (g_e + g_a \frac{da}{de} - Z_e - Z_Y \frac{dY}{de})/Z_m \lesseqgtr 0 \\ (f_e + f_a \frac{da}{de} - X_e - X_Y \frac{dY}{de})/X_m \lesseqgtr 0 \\ h_Y(Y_e + Y_a \frac{da}{de}) < 0 \end{bmatrix} \left(\frac{dY}{de}, Y_e, Y_a, f_a < 0\right)$$

equally important reason is the lack of response of output to exchange rate adjustment.

The case of devaluation with the contraction of output also poses an instability problem. With the contraction of output as shown in Table 1, $\frac{dm}{de}(nt) \lesseqgtr 0$, $\frac{dm}{de}(t) \lesseqgtr 0$, and $\frac{dm}{de} < 0$. In the case where all three equilibrium curves are downward sloping, for example, any change in e requires an inverse change in m to have equilibrium in any sector. But a decline in m may not be realized given the recurrent expenditure commitment.

The real money stock may be reduced by increases in P_{nt}. But this may not be depended upon to bring about internal and external balance since there is also a decline in money demand induced by the contraction of output. Thus, despite the devaluation, the economy experiences contraction of output with internal and external instability. In effect, devaluation with the contraction of output may give internal and external stability only when the state of the budget makes possible a reduction in the growth of the real money stock.

In the rest of the discussion, algebraic formulations are used to analyse further the importance of growth and also institutional reform for internal and external stability.

Using techniques popularized by Johnson (1973), let T represent time and the change in the variable V over time ($\frac{dV}{dT}$). If B is a change in reserves, then the change in money stock is:

$$(20) \quad \dot{M} = EB + \dot{D}$$

For convenience, the money demand equation (5) can be rewritten as:

$$(21) \quad M^d = P_{nt}\ h(Y)$$

Equilibrium is obtained for the sectors when $M^d = M$, $B = 0$ and the nontraded goods market is cleared. It is required that the real exchange rate which clears the money and nontraded goods sectors be consistent with the real exchange rate at which $B = 0$.

African Monetary Union and the Rand Monetary Area.

With monetary dependence, credit creation is linked directly to the acquisition of reserves. If n is some constant, then $D = nR$. Therefore:

$$(28) \qquad M = (E + n)R$$

From (28) $\dot{M} = (E + n)B$. When $M = M^d$, and $\dot{M} = \dot{M}^d$, the money sector is in equilibrium. With output fixed, and P_{nt} determined, $\dot{M}^d = 0$. Hence $B = 0$ when $\dot{M}^d = \dot{M} = 0$. External and internal balance are attained even with no growth in output.

However, this case begs the question of financing the recurrent expenditure commitments. Also, with currency dependence, devaluation becomes irrelevant though the currency will fluctuate in relation to the reserve currency. Lastly, the problem of internal instability arising from supply shocks such as economic contraction will still remain.

III. Conclusion

This analysis has implications for the role and effectiveness of stabilization policies based on devaluation for developing countries having serious balance of payments and inflation problems. The analysis suggests that external imbalance and inflationary pressure may be due not solely to domestic credit creation but also to the contraction or lack of growth of output.

It is contradictory to hold the view that exchange rate adjustment does not raise output and argue at the same time that devaluation be used to achieve external and internal stability. Given government expenditure commitments devaluation is not useful for attaining external balance and domestic price stability unless it is accompanied by economic expansion rather than contraction.

In the course of stabilizing the economy it is important that money supply growth be curtailed. It is also desirable that money demand growth be increased. It is because of inducing the growth in money demand that the growth of output is important.

The relevance of devaluation depends on whether or not, by

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