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Foreign Capital Inflow and Monetary Policies in a Financially Repressed Economy

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The financial liberalization process in LDCs has often disrupted by excessive foreign capital movement. The loss of monetary control has led to an accelerating inflation, a deterioration of current account and sometimes a slow-down of output growth. Incorporating the role of foreign capital in a monetary growth model, this paper investigates the effectiveness of three sets of macroeconomic policy which are typical in financial liberalization process — namely, a reduction in money growth rate, a hike in regulated interest rates and a depreciation of domestic currency. The disruptive effects of an increase in world interest rate is also analyzed in the same context.

I. Introduction

In many LDCs, the financial sector is strictly regulated by the government. Domestic interest rates are set much below the market clearing rates and foreign exchange rate is overvalued, thus causing the dual structure of the financial markets. These financial repressions restrain domestic saving and generate pressure for reliance on foreign capital to supplement domestic saving. In order to spur domestic saving and enhance the efficiency of investment, many LDCs have attempted to liberalize the financial sector. The typical financial liberalization package includes a hike in interest rate, a reduction in growth rate of money supply and a depreciation of domestic currency.

However, the experience of many LDCs in the last three decades shows that the financial liberalization process has been disrupted by attraction

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The current account consists of trade account and net interest payments. The current account, in terms of domestic currency, can be written as

(2) CURRENT ACCOUNT = $Pxy - e\delta y - i^* eF^*$,

where i^* is the world interest rate, and F^* is the outstanding foreign debt. The current account is assumed to be negative because one of the policy objective in this paper is to restore the current account balance.

The net inflow of foreign capital (ϕ) is assumed to be a function of differential between the domestic interest rate (i) and the cost of foreign borrowing.[2]

(3) NET CAPITAL INFLOW = $e\phi(i - i^* - \hat{e})y$,

where $\hat{e}$ is an exchange depreciation rate.

The overall balance of payments, which should be cleared through changes in domestic money supply, can be written as

(4) BALANCE OF PAYMENTS = $Pxy - e\delta y - i^* eF^* + e\phi y$

$= Py(x - \varepsilon\delta - \varepsilon\gamma i^* + \varepsilon\phi)$.

(4-1) $bp = x - \varepsilon\delta - \varepsilon\gamma i^* + \varepsilon\phi$,

where bp is a ratio of balance of payments to domestic output and γ is a foreign debt-output ratio. The overall balance of payments, which reflects changes in foreign exchange holdings, is assumed to be always positive.

Differentiate equation (4-1) with respect to the real exchange rate, ε, we obtain the following:

(5) $$\frac{\partial dp}{\partial \varepsilon} = \frac{\partial x}{\partial \varepsilon} - \delta - \gamma i^* + \phi.$$

The sing of $\frac{\partial dp}{\partial \varepsilon}$ depends on $\frac{\partial x}{\partial \varepsilon}$, δ, γ, i^* and ϕ. It is assumed that the sum of increases in exports and net capital inflows outweigh the sum of increases in imports and foreign interest payments when the real exchange

[2] Domestic borrowers, mainly large corporations, switch between domestic loans and foreign loans according to the interest rate differential.

$$(10) \qquad \frac{\partial \mu}{\partial \varepsilon} = \frac{1}{k} \frac{\partial bp}{\partial \varepsilon} > 0$$

An increase in the real exchange rate raises the growth rate of the money supply.

C. Consumption, Investment, and Growth

The household consumption (C) is assumed to be a fixed proportion, c of its disposable income:

$$(11) \qquad C = c\,[w\alpha y + \frac{D}{P}(i - \pi^e) - \theta \frac{M}{P}\pi^e],$$

where w is a wage rate, α is a fixed labor-output coefficient, D is savings deposit, i is a nominal interest rate fixed by government, π^e is expected inflation rate, and θ is a households' portion of total money holdings. The savings deposit (D) is the only financial asset available to the household. The marginal propensity to consume, c is a function of the expected real interest rate.

The investment (I) is defined as

$$(12) \qquad I = \dot{K} = y - c[w\alpha y + (i - \pi^e)\frac{D}{P} - \theta \frac{M}{P}\pi^e] - xy,$$

where $\dot{K}$ is an increase in capital. Substitute equation (7) into equation (12); then replace $\dot{K}$ by $\sigma\dot{y}$ and divide both sides of the equation by y:

$$(13) \qquad g = \frac{1}{\sigma}\{1 - c\,[w\alpha + (i - \pi^e)d - \pi^e\theta k] - x\},$$

where σ is a output-capital ratio and d is a deposit-output ratio. The growth rate of output (g) is a function of real exchange rate and deposit-output ratio.

Differentiating both sides of natural logarithm of equation (7) with respect to time, we obtain

$$(14) \qquad \pi = \mu - g.$$

Assuming a perfect foresight, the expectation of inflation rate is rational in the sense that the expected inflation rate, π^e, is always equal to the actual inflation rate, π. Substituting equations (9) and (13) into (14), we

$$(20) \qquad \dot{d} = \left(\frac{\dot{D}}{Py}\right) = \left(\frac{\dot{D}}{P}\right)\frac{1}{y} - dg.$$

By definition,

$$(21) \qquad \left(\frac{\dot{D}}{P}\right) = (1-c)\left[w\alpha y + (i-\pi^e)\frac{D}{P} - \theta\pi^e\frac{M}{P}\right] - \theta kgy.$$

Substituting equation (21) into (20), we get

$$(22) \qquad \dot{d} = (1-c)[w\alpha + (i-\pi^e)d - \theta k\pi^e] - (\theta k + d)g = 0.$$

Differentiating the identity, $\varepsilon = \frac{e}{P}$, with respect to time, we get

$$(23) \qquad \dot{\varepsilon} = \varepsilon(\hat{e} - \pi^e) = 0.$$

Since both π^e and g are functions of $\dot{\varepsilon}$ and $\dot{d}$, equations (22) and (23) represent the dynamic system of the economy.

III. Alternative Monetary Policies

In this section, three alternative monetary policies as well as effects of an increase in the world interest rate are considered.

A. A Reduction in the Ratio of Government Loan Payments to the Loan Supply

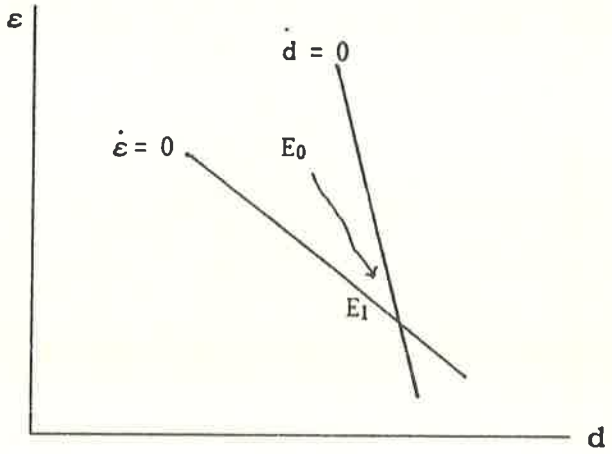
A reduction in the ratio of government loan payments to money supply does not affect the foreign capital movement.

In terms of our model, a discrete reduction in μ_0 shifts both $\dot{\varepsilon} = 0$ schedule and $\dot{d} = 0$ schedule upward to the right (See Figure 1).

As the inflation rate decreases due to a reduction in μ, the real exchange rate rises. This, in turn, leads to an improvement in the balance of payments, causing the money supply to recover from the initial drop. On the other hand, a reduced inflation rate raises the deposit-output ratio. Therefore, the resulting increase in the interest cost as well as the leakage to exports results in a reduction in the output growth rate. As the output increase slowly, the inflation rate rises again until it reaches the old equilibrium rate, $\hat{e}$. At the new equilibrium, E_1, the output growth rate is lower while the balance of payments per output is larger than before.

Figure 2

Dynamic Effect of an Increase in i



growth rate declines less, or even rises due to the forced saving associated with a higher inflation rate.

The new equilibrium output growth rate depends on the interest rate sensitivity of household saving rate and the size of financial intermediation.

C. An Increase in Exchange Rate Depreciation

In terms of our model, an accelerated depreciation shifts both the $\dot{\varepsilon} = 0$ schedule and $\dot{d} = 0$ schedule to the right (See Figure 3). However, the $\dot{\varepsilon} = 0$ schedule shifts further to the right than the $\dot{d} = 0$ schedule does. This is because an increase in depreciation rate raises the real exchange rate directly, but increases the deposit-output ratio indirectly through a reduction in the inflation rate.

An increase in the rate of nominal depreciation causes the real exchange rate to rise. A higher depreciation rate means higher cost of foreign borrowing. This, in turn, discourages foreign borrowing, reducing the growth rate of money supply. This could result in a lower inflation rate in the short run. The reduced inflation rate raises the real exchange rate even further, improving the balance of trade. However, eventually the growth rate of money supply rises and inflation rate accelerates until it

Figure 4

Dynamic Effect of an Increase in i^* (Case 1)

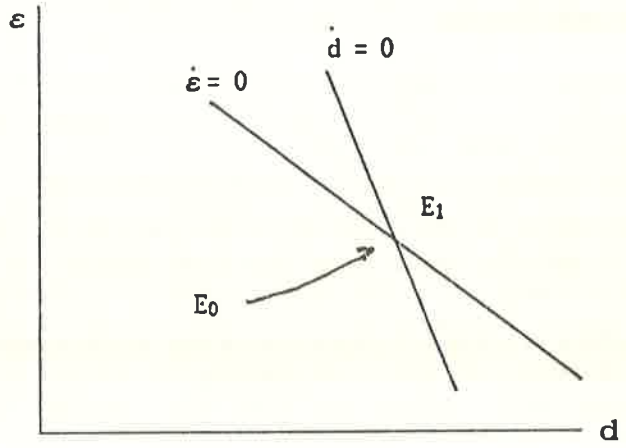
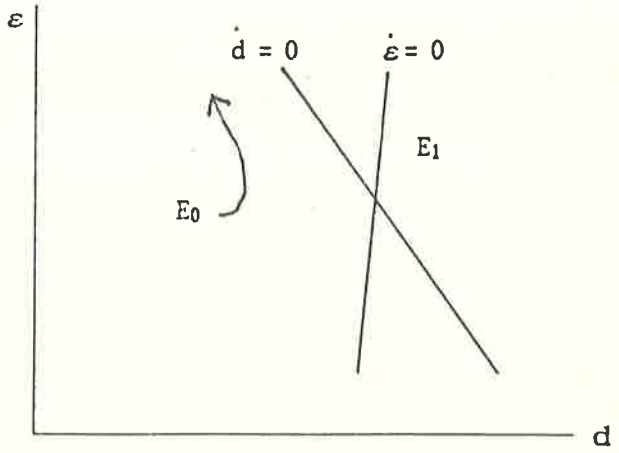


Figure 5

Dynamic Effect of an Increase in i^* (Case 2)



unstable. An increase in i^* causes the balance of payment to deteriorate; so does the money supply. This reduces the inflation rate. The resulting rise in ε has a negative effect on the balance of payments because now in-

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