Chapter 7: An analysis of policy impact of capital controls using the Mundell-Fleming Model

7.1 Introduction

The strong theoretical support for the use of capital controls was provided by J. Marcus Fleming and Robert Mundell in the 1960s. They demonstrated that a Government could achieve at most two of the following three conditions: capital mobility, monetary autonomy, and a fixed exchange rate.

Mundell-Fleming (MF) model (Martson, 1985; Hallwood, Sachs and Larrain, 1993) is named after Robert Mundell and J. Marcus Fleming. Mundell and Fleming incorporated the assumption of perfect capital mobility into international economic analysis. They have shown the importance of capital mobility in the conduct of stabilization policies. Consequently, following their work, there was a shift in emphasis toward the effects of short-term capital movements on the adjustment of exchange rates.

In the MF model, the capital mobility parameter (measuring the responsiveness of capital flows to changes in the domestic interest rate relative to foreign rates) was assumed to be very large. Slight pressures on domestic interest rates will generate massive capital flows that will induce the exchange rates to adjust. It is through the role of capital movements that, the capital account in the balance of payments becomes a predominant factor in explaining the exchange rate changes. It is within this analytical context that the exchange rate behavior is closely linked to the degree of capital mobility in the economy.

The model of MF is particularly useful in analyzing the effectiveness of monetary and fiscal policies in an open economy setting, it also forms the basis of recent models of the determination of exchange rate and stabilization policy (Martson, 1985; Hallwood and MacDonald, 1986). In the discussions between Kuroyanagi and Hayakawa (1997) and the four Asean officials responsible for their respective

macroeconomic policies, they confirmed those officials took into consideration the MF model when analyzing their economies.

However, where capital controls exist with fixed exchange rate, the assumption of capital mobility where interest rates in the home country must equal to interest rates in the world economy should be dropped. The following analysis is thus limits to such an economic setting in Malaysia's current economic environment.

7.2   Effects of an expansionary fiscal policy

The effects of fiscal and monetary policies in an economy of liberal capital movements differ according to whether the adopted system of exchange rate is fixed or flexible. With a fixed exchange-rate system, fiscal policy is effective in adjusting aggregate demand, but monetary policy is not (Sachs and Larrain, 1993). Conversely, with a flexible exchange rate system, the effective policy is monetary, not fiscal.

The contraction in Malaysian economic activities has adversely affected the financial performance of the corporate sector and the banking system, the confidence in economic stability and social well being. To revitalize the economic activities, fiscal stimulus is used to generate economic growth.

In the Malaysian 1999 Budget, the Federal Government continues with its fiscal stimulus to spearhead the economic recovery. As a result, the Federal Government overall account is expected to register a deficit of RM16.6 billion, or 6 percent of gross national product (GNP).

The consolidated revenue collection of the general government (federal and state) in 1999 is projected to decline by 12.0% to RM61.8 billion (1998: RM70.3 billion). The consolidated current account of the public sector in 1999 will be at RM34.5 billion or 13.1% of GNP (1998: RM41.9 billion or 16% of GNP). Development expenditure of the public sector is projected at RM41 billion in 1999

(1998: RM44.7 billion). The allocation for economic sectors (i.e. trade, industry sub-sector, and transportation sub-sector) remains the largest proportion (43.7%). Hence, the overall public sector will record a larger deficit of RM6.5 billion or 2.5% of GNP (1998: -RM2.8 billion or 1.1% of GNP).

The deficit will be financed from borrowings from both the domestic and international markets. The Government subsequently announced in the newspaper that two-third of the finance needs is estimated to be obtained locally while the balance to be obtained from external sources. Locally, EPF was identified as the major source apart from Socso and Tabung Haji. The Government would not secure any resources from the banking system to prevent from crowding out the private sector. Externally, the Government is working with various institutions and countries (like Japan and World Bank) to obtain external borrowings. Bank Negara Governor Tan Sri Ali Abu Hassan pointed out that the total financing required would be at RM62 billion for both the years 1998 and 1999.

Using the Mundell-Fleming Model, the increase in Government expenditure increases income which will be associated – if the economy is previously underemployed[16] - with increases in employment and output. The increase in aggregate demand will lead to a deficit in trade balance as imports rise. Over time, the trade deficit provokes a decline in money supply. When this occurs, interest rates rise and aggregate demand returns to its initial level. Thus, fiscal policy is only effective in the short run. In addition, the increase in Government expenditure crowds out private spending in the short run, and over long run, the crowding out is total: the increase in interest rates fully crowd out private consumption and investment.

Although the latter scenario may not occur in Malaysian case (i.e. no crowding out effect as Government relies on the non-inflationary source of finance), the revival of infrastructure and other projects raise many concerns that they will

eventually raise imports. The likely consequences of worsening trade balance should not taken lightly.

7.3 Effects of an expansionary monetary policy

With the imposition of capital controls effective from September 1, 1998, BNM has subsequently announced a series of measures to complement Government effort to inflate the economy. These measures (Table 7) are aimed to provide cheaper funds to boost domestic consumption and to extend credit to the economy sector. The measures have the combined effects of releasing the liquidity and lowering the holding costs of liquid assets in the banking system, making available more loanable funds to borrowers at a lower interest rate.

Table 7: Monetary measures from September 1, 1998.

Measure	Date introduced
1. Stepwise decrease in SRR:	
10% → 8%	July 1, 1998
→ 6%	Sept 1, 1998
→ 4%	Sept 16, 1998
2. 3-months intervention interest rate	
10% → 9.5%	August 27, 1998
→ 8%	Sept 3, 1998
→ 7.5%	Oct 5, 1998
→ 7%	Nov 9, 1998
3. Prohibition of vostro accounts of foreign banks maintained with local commercial banks.	Sept 3, 1998
4. Stepwise cuts in 3-months intervention rate:	
9.5% → 8%	Sept 3, 1998
→ 7.5%	Oct 5, 1998

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[16] This condition is not fulfilled in Malaysia if referred to the unemployment of only 3.3% in the third quarter of 1998.

→ 7%	Nov 9, 1998

5. Relaxed lending rules:
 	
  (i) Residential properties costing RM250,000 and below were exempted from 20% property sector lending ceiling.
 	
  (ii) Abolished the 60% margin of financing for purchase of non-owner occupied residential properties costing RM150,000 and above; shop lots costing RM300,00 and above; and land lots.
 	
  (iii) Raised ceiling on loans for the purchase of shares and unit trusts from 15% to 20%.
 	
  (iv) The earlier measure to tighten hire purchase loans for passenger cars was repealed and relaxed, with no restriction being imposed on repayment period for such loans, while the margin of financing was increased from 70% to 85% of the purchase price of passenger cars.
 	
  (v) Reduced minimum monthly repayment on credit cards from 15% to 5%.
	
	Nov 20, 1998

6. Set a minimum 8% growth rate for domestic financial institutions in 1998.	Sept 9, 1998
7. A cut in the liquid asset ratio requirement to 15% from 17% of total eligible liabilities base of banking institutions to ease the credit.	Sept 16, 1998
8. Banking institutions are required to reduce the maximum margin over the quoted base lending rate (BLR) to 2.5 percentage points from 4 percentage points.	1 October 1998

Source: BNM, Quarterly Bulletin, Jul-Sept, 1998.

Using the MF Model, a monetary expansion under a fixed exchange rates system and capital controls block interest arbitrage with the world capital market. The increased money supply will entail a decline in the velocity of circulation and lead to a reduction in the interest rates and will stimulate an increase in private expenditure on investment and consumption (Fleming, 1963), both directly and via the Keynesian multiplier. The rise in expenditure will be associated with a small increase in income and output. With increased income and lower interest rates, domestic absorption[17] will rise, thereby causing total imports to rise. When imports rise while exports remain unchanged as a result of fixed exchange rate (causing the relative price of import either constant or fallen or unable to adjust for export competitiveness), the economy will move into trade deficit.

The trade deficit implies a drop in money supply; and the counterpart of the change in the money supply caused by a trade surplus or deficit is a change in central bank reserves (Sachs and Larrain, 1993). Therefore, a trade deficit will mean that the central bank will lose foreign exchange reserves. On the contrary, a trade surplus will increase the central bank foreign exchange reserves. As foreign exchange reserves are declining, money supply will be falling. The progressive tightening of money supply will in turn lead to a progressive reduction in aggregate demand. Therefore, the monetary expansion is progressively reduced by the worsening trade deficit, until the accumulated trade deficit match the initial increase in money supply, and at that point, the entire increase in money supply will have been offset.

Thus, monetary policy has a short-term effect that is extinguished over time. But one change is for sure: the central bank will lose foreign exchange reserves equal to the sum of trade deficits. Monetary expansion can be sustained only as long as reserves hold out.

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[17] Absorption is the sum of consumption, investment, and government spending.

With the view to make a more complete analysis of the impact of capital control measures, a cross examination of the real economics performance is carried out in Chapter 8.