Reserve Bank of India Occasional Papers
Vol. 19, No. 2, June 1998

***Exchange Rate Determination and Control,* Giorgio Radaelli, Routledge Publication, London, 1995 pp. 117, Price £ 42.50.**

Choice of an appropriate exchange rate regime, identifying the right level for the exchange rate, and designing an effective intervention strategy constitute three critical areas of research in the sphere of exchange rate management by the central banks. With globalisation of trade and finance, exposure to currency risk has magnified considerably and unexpected exchange rate volatility is often found to be unrelated to developments in domestic economic fundamentals. Conduct of exchange rate policy in many developing countries has increasingly become a complex and a challenging task particularly in the context of the surges in private capital flows and liberalisation of cross border capital movements. Coordination of monetary policies at regional/global level, sterilised foreign exchange market interventions, and (re)introduction of exchange and capital controls have generally been resorted to, singly as well as in concert, by national authorities to contain exchange rate volatility. As each of these instruments has limitations the right approach to contain volatility still remains an ambiguous issue. While highlighting this aspect in his book Radaelli suggests some empirically well tested measures which could serve as useful guide to policy by drawing on the experience of the ERM and the G3 countries.

In Chapter 1 Radaelli identifies the factors which contributed to the stability of the currencies of the ERM in relation to non-ERM currencies and explicates the importance of monetary policy convergence in relation to capital controls and sterilised interventions in ensuring ERM stability. The relative stability of the ERM currencies could partly be due to high degree of convergence among national monetary policies evident in terms of the high correlation between monetary variables such as monetary aggregates, interest rates and domestic inflation. Evidence of high monetary convergence is also found among several non-ERM economies but their currencies do not exhibit the same degree of exchange rate stability. This suggests that exchange rate stability cannot be unambiguously ascribed to the pursuance of convergent monetary policy which has associated costs in the form of loss of monetary policy independence as also welfare loss arising due to capital controls. According to Radaelli, in the process of overemphasising the role of policy coordination and capital controls the efficacy of intervention operations have been largely underestimated. What contributes to undermining the importance of intervention is the perception that intervention amounts would at best constitute only a marginal proportion of the exchange market turnover or the existing stock of assets in any currency and hence may fail to affect the behaviour of the exchange rate. The ERM mechanism, however, provided for unlimited intervention at the compulsory intervention rates (i.e. near around the bands) and the mutual loan facility under the Very Short Term Financing Facility (VSTFF) ensured each central bank access to the currency of another central bank. This *symmetrical* intervention channel, in a sense, contributed to monetary convergence since such interventions involved opposite effects on the monetary base of the participating ERM nations. ERM countries, however, often resorted to *asymmetric* interventions affecting the monetary base of the intervening country only. Radaelli found that less than 15 per cent of the total ERM interventions were actually at the compulsory intervention rates indicating that a large part of the ERM interventions were actually of asymmetric nature. According to Radaelli the ERM crisis that started in September 1992 was not due to the failure of capital controls and ineffectiveness of intervention operations, but was the result of a supply shock emanating form unification of Germany that warranted a realignment of bands. Furthermore, the relative stability of the ERM currencies in the pre crisis period was ensured largely through interventions and not through capital controls alone. Radallei therefore argues that complete removal of capital controls from countries like Ireland, Portugal and Spain may not endanger the stability of the ERM.

Persistence with capital controls may not help in ensuring exchange rate stability and such controls may actually turn ineffective in the long run. He cites the experience of France and Italy to show how removal of capital controls in these economies did not destabilise the ERM during the nineties. Empirically, effectiveness of controls is generally studied by estimating the degree of deviation from the parity suggested by the law of one price. This, however, enables one to capture the price effect and not the quantity effect. According to Radaelli, while exchange controls gave rise to a large discrepancy between onshore and offshore interest rates in the ERM countries the yield differentials arising on account of capital controls have been generally low and relatively stable. For example, the differentials between the Euro-DM and German domestic interest rates were never above fifty basis points and whatever small differential existed it was largely due to the reserve requirement (a form of capital control) applicable to domestic banks. On the other hand in the case of France and Italy which retained exchange controls on the underlying capital transactions, the differentials between the onshore and the off-shore rates exceeded 20 percentage points on several occasions.

Countries generally retain capital controls so as (a) to ensure that domestic savings contribute to domestic capital formation, (b) to enhance the degree of monetary policy independence, and (c) to fight speculative attacks particularly in an adjustable exchange rate system like the ERM. The empirical exercise undertaken by Radaelli in this book, however, shows that in both France and Italy capital controls proved ineffective in achieving these objectives. In France capital controls existed since 1939 but such controls were tightened severely only in the early eighties. The measures included compulsory surrender of export earnings within two weeks, permission for foreign direct investment only if financed 100 per cent by foreign currency loans, monitoring the positions of banks vis-à-vis individual non-residents, preventing banks from providing francs to non-residents through any contract that would spiral speculation, and subjecting capital outflows for the purchase of real estate to state authorisation. Italy also tightened controls during the seventies and eighties amidst severe external payments imbalances which included the requirement that foreign assets and liabilities of the banks must be balanced on a daily basis, a compulsory non-interest bearing deposit with the central bank amounting to 50 per cent of incremental investment abroad and taxes on foreign exchange purchases. In both France and Italy, prior to early eighties, capital controls helped the authorities to some extent in strengthening the external balance and reserve position. But during the eighties, particularly since 1986, controls proved mostly ineffective in stabilising the exchange rate. External sector developments in these two countries in the aftermath of capital account liberalisation in the late eighties vindicates the findings of Radaelli that removal of restrictions on capital transactions can bring down pressures on currencies and help them to realise a more stable exchange rate system. It needs to be noted however that capital controls can work as a powerful short-term anti-speculative device when used effectively during periods of acute exchange market pressures.

In Chapter 3 Radaelli deals with the theoretical explanations for the movement of the US dollar *vis-à-vis* the DM and the Japanese yen. After briefly reviewing the theoretical exchange rate models such as the monetary model (fixed price, flex price and sticky price), the balance of payments model and the portfolio balance model he elucidates how the portfolio model has gained precedence over the monetary approach in the more recent decades. With the collapse of the Bretton Woods system the influence of capital account transactions on the exchange rate has gradually increased and one often finds large cross border capital movements which are quite unrelated to real trade transactions. As a result the asset market approach to exchange rate has emerged as an important transmission channel that could provide reasonably acceptable explanations for movement of exchange rate over a particular time horizon. In justification of the portfolio approach, Radaelli carries out empirical exercises to explain the long run behaviour of the DM/US dollar and the yen/US dollar rate over the first quarter of 1973 to the last quarter of 1991. Both the OLS and co-integration techniques are used to establish the presence of a long run equilibrium relationship between the exchange rates and several identifiable fundamental determinants of the exchange rate underlying a standard portfolio balance model. For the DM/US dollar rate the empirical findings validate the assest approach to exchange rate determination with rates of return and private financial wealth emerging as the dominant determinants. The empirically estimated equilibrium suggests that by the last quarter of 1991 the US dollar was undervalued by about 8 per cent against the DM, a result also borne out by the PPP rule. Furthermore, the influence of the wealth effect on the exchange rate was seen to be declining during the eighties with corresponding increase in the influence of interest rates. Empirical results also showed the rising degree of substitutability between the US and the German financial assets. In a VAR framework the impulse response function indicated that the German monetary policy was to some extent influenced by the US policies whereas the US monetary policies were largely a function of domestic developments. A more or less similar finding was reported in respect of the Yen/US dollar rates. The long run asset market equilibrium showed that the US dollar was about 14 per cent undervalued against the yen and this also turned out to be consistent with the PPP rule as in the case of the DM/US dollar rate. A majority of the empirical analyses conducted to test the relevance of the standard theoretical exchange rate models has yielded two important findings : (a) no exchange rate theory provides a complete explanation for the behaviour of exchange rates, and (b) random walk models generally outperform the models based on theories. Radaelli had proved in 1988 in one of his research papers that some of the structural exchange rate models could outperform the random-walk models. In this book he has reiterated this point and shows that the long run behaviour of the exchange rates could be reasonably explained through the asset market behaviour although not to the fullest extent. The validity of the asset market approach also vindicates the view that exchange market interventions are potentially effective.

According to Radaelli unsterilised interventions in general are known to affect exchange rates by altering the relative supplies of money and interest rates. Effectiveness of sterilised interventions, however, depend on the efficacy of the portfolio balance channel. Sterilised interventions alter the relative levels of assets denominated in different currencies which are generally imperfect substitutes. Another channel for influencing the exchange rate through interventions is the signaling mechanism, which the central banks can use to influence market perceptions. The effectiveness of portfolio balance models discussed in the book has raised two crucial but related questions. The first one relates to the direction of causation, i.e. whether exchange rate movements influence asset preferences and thereby alter the relative asset levels or exchange rates themselves are a result of shifts in relative position of asset levels. The second is the extent to which portfolio balance channel is actually used by the central banks in their exchange market operations. Radaelli addresses these two issues in Chapter 4 by using central bank balance sheet data as proxy for sterilised interventions. Causality tests undertaken by the author showed no strong evidence that interventions systematically affected the exchange rate of three major currencies, i.e. US dollar, the DM and the yen. As regards the two ERM currencies some evidence of successful intervention is available only in the case of the Italian lira. According to Radaelli these contradictory results on the effectiveness of intervention obtained from the empirical exercises conducted in Chapter 3 and 4 could be ascribed to the nature of the exchange rate data used in the two sets of analyses.

It is essential to recognise that monetary policy coordination at the global level has a significant implication for the exchange rate stability. Exchange rate developments mirror the asymmetric supplies of different national monies in relation to their demand. Towards the late sixties and the early seventies the Phillips curve analysis gained ascendancy which prompted many national authorities to move in the direction of greater exchange rate flexibility. A flexible exchange rate apparently promised monetary independence in terms of the freedom to choose any point on the Phillips curve. As a result in the post Bretton Woods period the external constraint to money supply turned out to be less binding and pursuance of asymmetric monetary policies contributed to greater exchange rate volatility. In recent years there has been a surge in empirical literature indicating that the trade-off suggested in the Phillips curve approach may not necessarily hold. From the standpoint of ensuring exchange rate stability, therefore, national authorities must attach greater importance to monetary policy coordination. The policy responses of many countries amidst severe currency crises reveal the crucial importance of symmetrical monetary policies for ensuring exchange rate stability. During periods of excessive volatility, exchange market interventions are generally supplemented by a tight monetary policy to stem speculative pressures and align domestic monetary conditions with international developments. Intervention is, thus a short term measure while for long-term stability of the exchange rates, some degree of international monetary coordination appears crucial. In Radaelli's analysis of ERM stability, however, intervention operations turn out to be more effective than monetary policy coordination. For interventions to be successful, a necessary precondition is to have an idea on the rate at which the exchange rate must be stabilised. A rate that equilibrates demand and supply and necessitates intervention support from the central bank only at the margin for a short period of time could be the ideal equilibrium level. Radaelli, however, does not mention how the ERM parities were decided and to what extent the selection of appropriate parities actually contributed to stability. Intervention operations around an equilibrium rate could be successful whereas any level of intervention may prove ineffective if the rate that is to be stabilised is a severely misaligned one. Radaelli also does not explain why removal of capital controls in France and Italy did not destabilise the ERM system. To reap the benefits of an open capital account what becomes crucial for an economy is to ensure a sound macroeconomic framework, a strong and resilient financial system and adequate safeguard measures to deal with sudden and unexpected policy failures. In the last decade or so, in their attempt to achieve a common currency for the EU members, the ERM countries have been pursuing policies to achieve the convergence criteria and their emphasis on attainment of convergence of certain key fundamental macro-economic variables can be considered as preconditions for an open capital account. During the eighties, on the other hand, the macroeconomic indicators of the ERM members were divergent and as a result, retention of capital controls helped the system to sustain stability. Furthermore, Radaelli highlights the asymmetric nature of the intervention operations undertaken by the Japanese and the German authorities but does not suggest what could be an appropriate intervention strategy, particularly when exchange rate is assigned the dual objective of ensuring price stability and preventing deterioration in external competitiveness. The

Japanese authorities generally intervene when the US dollar depreciates, i.e. external competitiveness consideration predominates the exchange rate policy. The German authorities, on the other hand, intervene when the US dollar appreciates so as to contain the danger of imported inflation.

In the conduct of exchange rate policy the overwhelming importance of capital account developments is getting wider recognition now. The asset market view and the portfolio balance channel are accordingly finding greater acceptability at the policy level which was hitherto led by the standard monetarist approach. There is, however, no transparent and definite procedure that could guide the authorities in effectively using the portfolio balance channel of intervention at the policy level. Radaelli throws some useful light on the policy dilemma confronting central banks of the ERM countries in this book and offers several forceful arguments in explaining the ERM stability. This book should be read by academics as well as by those who closely and carefully monitor the activities of the central bank for designing their own strategies in a market economy.

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