CHAPTER 2

A REVIEW ON THE CONCEPT OF FINANCIAL LIBERALIZATION AND ITS IMPACT ON THE CONDUCT OF MONETARY POLICY

2.1 Introduction

This chapter presents an overview of the concept of financial liberalization and its effects and implications on the various aspects of the financial systems. Since financial liberalization and innovation have changed the landscape of financial system and operation, many countries have found it to be difficult to retain their monetary aggregates as their intermediate target. As a result, the monetary policy frameworks have evolved away from strict adherence to monetary targets towards alternative policy frameworks such as short-term interest rate targets, exchange rate targets and inflation targets.

Therefore, this chapter reviews the impact of financial liberalization on the conduct of monetary policy, mainly examining how the waves of financial reforms have changed the types of monetary instruments, targets, as well as the mechanism of monetary transmission. The review is mainly based on the industrialized country experiences.

2.2 Financial Liberalization

Both Ronald Mckinnon (1973) and Edward Shaw (1973) drew attention to the prevalent "financial repression" in postwar economies, whereby the governments of these economies generally fixed the interest rate and determined the allocation of credit. Frequently, due to the need for low-cost finance, these economies hold their interest rates down. The downward pressure on interest rates and the ensuing inflation led to periods of low, oftentimes negative real interest rates.

Severe interest rate repression and the non-market credit allocation mechanisms usually appear together since the controlled low lending rates lead to limited supply of fund and excess demand for credit. The inadequate supply of credit and political pressures in the economy call for directed credit allocation and much of the time, the aim of the directed credit is to channel low cost credits to "priority sectors".

According to Mckinnon hypothesis, a sub-market real interest rate would suppress the savings rate and thus reduces the accumulation of physical capital. In due course, the reduction in the availability of loanable funds and investment would impede economic growth. Mckinnon's main argument was that, high (positive) real interest rates are necessary to encourage agents to accumulate money balances. Moreover, he claims that in an environment of high interest rates, investment will take place as long as the real interest rates do not exceed the real rate of return on investment.

Meanwhile, according to Shaw hypothesis, low interest rate ceilings and repressed financial system would result in an inefficient allocation of credit. The sectoral allocation schemes often proved costly in terms of allocative efficiency because the

supply of adequate credit to priority sectors were questionable. The substantial misallocation occurs when the government channels much of the reduced amount of loanable funds at below market price to inefficient public enterprises and favoured private borrowers who are generally far from being poor. Shaw's main arguments is that, high interest rate would encourage savings and at the same time discourages investment on low-yielding projects. He also, stresses that high savings in the banking system would enable the banks to lend more resources in a productive and efficient manner.

On the whole, a repressed financial system can be characterized as a system with interest rate restrictions, domestic credit controls, high reserve requirements, segmented financial markets, under developed money and capital markets and controls on international capital flows. As time passed by, it became apparent that severe financial repression had large costs in terms of growth and distribution on the countries that practiced it.

With regards to the above mentioned problems, financial liberalization can be perceived as a set of operational reforms that can lead to greater flexibility in interest rates, enhance the role for credit and foreign exchange allocations and increase the autonomy of the commercial banks. In addition, it is expected to provide greater depth for money, securities and foreign exchange markets, and increase the cross border flow of capital.[3]

According to Tseng & Corker (1991), financial reforms can be separated into domestic and external reforms. The domestic financial reforms were mainly aimed

[3] Bank autonomy refers to bank's own internal procedures that are used to determine matters such as which type of business banks may engage and where branches may be opened or closed and etc.

at liberalizing interest rates, reducing controls on credit, and enhancing competition and efficiency in the financial system, strengthening the supervisory framework and promoting the growth and deepening of financial markets. Meanwhile, external reforms were aimed at relaxing the restrictions on international capital flows and shifting more towards flexible exchange rate arrangements.

Financial liberalization comprises a range of policies that go well beyond the formal freedom of financial institutions to determine interest rates. These policies include:

I. **Arrangement to spur financial market competition such as freedom to enter for new financial institutions as well as orderly exit of failing institutions;**

To enhance bank's efficiency, it is important to reduce obstacles to competition and market segmentation. This is expected to be achieved by allowing greater freedom of entry, expanding the scope of permissible business activities for different types of financial institution and relaxing the restrictions on the activities of foreign banks. The main aim here is to level the playing field by removing any artificial barriers set up in the earlier years. Banks also needed to be given greater autonomy and more responsibilities for their operational performances. Deregulation of the financial system should be accompanied by measures to strengthen the supervisory framework. These measures are essential since the absence of adequate prudential regulations and bank supervision may lead to the failure of the financial institutions (Williamson & Mahar, 1998).

II. Limitation on reserve liquidity and portfolio requirements to what is necessary for the proper conduct of monetary policy and prudential regulation;

High reserve and liquid asset ratio requirements encourage the emergence of other unregulated financial intermediaries and instruments. Such development weakens the monetary controls by eroding the effectiveness of the direct control and distorts monetary indicators. Furthermore, unregulated institutions are by nature less supervised and are more prone to solvency and liquidity problems. This poses a threat to a financial system's stability. In such situation, Tseng & Corker (1991) has stated that the low reserve requirement is deemed important as it would reduce the implicit tax on commercial banks and thus discourages disintermediation process.

III. Liberalization of interest rates and elimination of credit controls;

Many countries implemented interest rate liberalization with the aim of allowing financial markets and intermediaries to play a greater role in determining the interest rate. An important aim of liberalizing the interest rate was to raise real interest rate, which had generally been negative during the 1970s.[4] Theoretically, it is believed that a positive real interest rate would reduce financial disintermediation and encourages savers and investors to seek the formal financial system.[5] The rise in the deposit rates would increase the amount of funds available in the financial system. The increased volume of

[4] Market based interest rates can be positive or negative in real terms, depending on market conditions.

[5] The overly regulated financial systems discouraged financial savings, created distortions in investment decisions and failed to intermediate effectively between savers and investors.

credit and the easing of directed credit restrictions permit a better allocation of loanable funds.

As stated in Caprio & Hanson (1999) if directed credits were eliminated and allocation was made solely by the financial institutions, the misallocation of resources can be reduced because these institutions have the incentives to find out about the quality of their lending and the likelihood of repayment by borrowers. Therefore, the market-based allocations provide more incentives to discover information about the users of funds than the government directed credit operations.

The theoretical arguments linking interest liberalization and the increased efficiency in the allocation of credit is further believed to contribute to economic growth by promoting financial deepening and improving the productivity of investment (Tseng & Corker, 1991). Financial deepening involves the designing and implementation of policies to increase the monetization of the economy to foster and develop a sound and diversified financial structure with coordinated money and capital market.

IV. Dismantling of capital controls to allow for market-determined financial transactions;

Prior to liberalization, international capital flows in many countries were strictly controlled, mainly to insulate domestic interest rate and monetary conditions. Such excessive controls and regulation were increasingly viewed as inappropriate for efficient resource allocation and for the attainment of rapid

economic growth. Thereupon, liberalizing the capital account is deemed beneficial especially to the developing countries, as it would help to divorce the level of domestic investment from the level of domestic savings and at the same time ease the capital shortage problem.[6] Moreover, as mentioned in Williamson (1998), by holding internationally diversified portfolio, risk on investment can be minimized while financial sector's efficiency level can be improved by allowing the foreign banks to enter and increase the competition in the market. The international capital flow and entry of foreign banks are expected to enhance the efficiency level in the financial system and thus produce positive impact on the economy.

2.3 Pace And Scope Of Financial Liberalization

The pace and scope of financial reforms differed considerably among the countries. In some countries, the reforms were concentrated in major and discrete episodes of comprehensive liberalization while others adopted a gradual and continuous process. As for the Asian countries, financial sector reforms have been a gradual, phased and continuing process.[7] As stated in Williamson & Mahar (1998), a number of these countries progressively dismantled their directed-credit programs by introducing market-based rates on the directed loan, increasing the number of categories eligible for special credit access or by reducing the scope of the credit program. In Indonesia, Malaysia and South Korea, targeted-lending programs were reduced in scope and thus were more subjected to market rates. Although Malaysia and Indonesia assumed the lead in interest-rate deregulation, they did not complete

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[6] When domestic investment opportunities (especially those that are worthwhile at the world interest rate) exceed domestic savings, it creates shortage in capital supply.

[7] Except for Indonesia, whereby the liberalization was more of discrete nature.

their reforms until the late 1980s and in fact there were some temporary policy reversal along the way.

Table A.1 in Appendix A provides a summary of changes in financial sector policy undertaken by various economies. Only nine countries have been selected of which five are industrialized economies and the remaining four are the Asian countries. It can be concluded that, some economies like Germany, United Kingdom and United States had fairly liberal system since 1973 while the remaining countries were predominantly repressed.[8]

2.4 Implications Of Financial Liberalization

The financial reforms undertaken by the developed and developing countries thus so far entailed many important changes to the financial systems. The ensuing discussion reviews the effects and implications of financial liberalization on the various aspects of the financial system.

2.4.1 Deposit and Credit Growth

Following financial liberalization, both credit and deposit growth tend to increase. The response of credit growth is initially more rapid than deposit growth. The rapid growth of credit is perhaps not surprising following the removal of interest rate and credit controls that had previously restricted credit growth. Once the direct controls are removed, financial institutions responded by meeting the excess demand for

[8] In 1973, the Bretton Wood system collapsed.

credit by running down excess reserve that they have built up under the direct credit controls and by attracting capital inflows.

According to Johnston & Brek (1999), the subsequent development in deposit and credit growth depended very much on the structure of real interest rates. If real interest rates were maintained at a positive level by the central banks, the growth of credit would slow down compared to the initial post-reform credit boom. However, he also claimed that the growth of credit might still remain higher than in the pre-reform period because of the general increased role of the financial sector in mobilizing and allocating resources following financial liberalization.

On the other hand, the growth of deposits continue to increase as the result of the lagged portfolio adjustment to the financial liberalization measures, the development of new financial instruments and institutions, and the reduction in central bank liquidity level. Overtime, the growth of deposit and credit tend to converge, allowing for balanced growth with a higher level of overall resource mobilization than in the pre-reform period.

Conversely, when real interest rate is kept negative by the central bank, it encourages more rapid growth in credits and slower growth in deposits, resulting in resource imbalances. The management of the excessive credit growth is a critical element for successful financial liberalization. The pre-reform environment did not interest banking institutions to invest in credit assessment and risk management skills. This attitude was carried into the post reform period. Consequently, rapid credit growth resulted in an increase in lending to more high-risk projects (Caprio & Hanson, 1999). Overtime, this resulted in a crisis. A good example is the recent East Asian financial crisis, where the rapid credit expansion has exposed banking

sectors to high non-performing loans. Banking claims on the private sectors in the region increased by more than 140 percent relative to GDP in 1996 (Sachs & Radelet, 1998).

2.4.2 Liberalization of Interest Rates

The liberalization of interest rate was a prominent feature of the financial reforms. For many countries, the liberalization of interest rates together with the substantial progress achieved in reducing inflation resulted in a positive real interest rate. Not only countries moved away from negative real interest rates, but some moved quickly to interest rates that are very high in real terms (Williamson & Mahar, 1998).

In many countries, the liberalization process has led to more variability and less predictability in domestic interest rates. Owing to "bank autonomy", the financial institutions were given the flexibility to adjust their interest rate policies to suit their own strategies as well as to suit the changing financial environment. Hence, commercial banks' deposits and lending rates tended to adjust more frequently and with a large magnitude. In this situation, the task of maintaining stable money market rates has become increasingly difficult (BIS, 1998).

Positive high interest rates along with high degree of openness of economies to capital flows promoted flexible capital movements especially those related to short-term private loans. According to Awang Adek (1992), under liberalized financial system with no restrictions on capital flow, the external factors especially foreign interest rates played increasing role in the determination of domestic interest rates.

Given this situation, central bank generally finds it difficult to monitor the interest rates.

Based on many country experiences, Johnston & Brek (1999) also found that the macroeconomic effects of interest rates and the ability to keep them under control following the liberalization have affected the soundness of financial institutions and the financial structure of the non-financial firms. The speed and nature of interest rate liberalization highly depended on the financial structure of the non-financial firms and the pace with which the problem banks could be restructured. If the non-financial firms are highly leveraged, any sharp increase in real interest rates could weaken the repayment capacity of these firms and thus aggravate the bank's health. Under such circumstances, if the resources are not available to re-capitalize the banks and restructure their portfolios, the ability to keep interest rates under control may become a critical issue.

2.4.3 Capital Mobility

Financial liberalization along with technological advancement had major implications on the movement of funds from one place to another. These funds are moving and shifting all the time looking for higher returns without any particular preference to any particular country. Central banks may find it difficult to conduct an independent monetary policy because the effectiveness of monetary policy depends on its ability to deal with proper indicators and targets. In many countries including both the developed as well as developing nations, the high capital movements caused destabilizing effects on domestic monetary aggregates. The definition of monetary

aggregate has changed and thus the relevance of these aggregates as indicators of monetary policy has been reduced (Dekle & Pradhan, 1997).

As capital account liberalization progressed, a number of countries have responded to the increase in capital flows by adopting greater exchange rate flexibility as a way of reducing short term capital inflows that reflected interest rates differential. However, if the exchange rate movements are mainly determined by speculative elements of the capital flow, then it becomes a great concern to the central bank. Under increased exchange rate volatility, if there is limited short-run flexibility of fiscal policy, the central bank has no choice but to rely on temporary capital control measures to deal with the volatile capital flows. Recent Asian crisis that started in the mid-1997 caused the affected countries such as Malaysia and Thailand to impose some controls on their capital movement.

2.3.4 Financial Stability

The soundness of financial institutions carries significant implications on the effectiveness of monetary policies. In many developing East Asian and Latin American countries, financial liberalization was followed by a financial crisis that seriously disrupted the financial sector and the economy. The financial crisis affecting these countries had some common features, particularly having financial institutions with sizeable non-performing loans and facing persistent cash flow problems. The affected countries, found that interest rate policies and real sector reforms lose their effectiveness in achieving macroeconomic objectives.

This was further precipitated by the lack of bank supervision and absence of well designed prudential regulations. Sachs & Radelet (1998) as well as Williamson & Mahar (1998) noted that the abruptness of the financial liberalization did not provide enough time for the financial institutions to develop internal monitoring, credit appraisal and risk management process that would have been necessary in the more liberal financial environment.

2.5 Monetary Policy And Financial Liberalization

In general, monetary policy is used as a means towards achieving the ultimate economic goals of price stability and sustainable economic growth. Since there is a problem of obtaining timely and accurate information on the final variables of prices and output, the monetary authorities need to set some intermediate targets. The intermediate targets, which are deemed to be closely related to the prices and output will then be used to plan and control the monetary policy. The candidates for intermediate targets often included money stock, interest rate, and exchange rate or credit aggregate.

Unfortunately, over a short period of time, even these intermediate targets are difficult to control and thus the monetary authorities has to establish an operating procedure to guide them in their day-to-day policy actions. In other words, no matter which intermediate targets are chosen, the central bank must implement an operating procedure to enable it to achieve the desired level of the targeted variables. A central bank may elect to target reserves of the banking system or alternatively may attempt to keep interest rate at a certain level as the central component of its operating procedure (Stuart, 1992).

While implementing policy on a day-to day basis, the central bank has to rely on monetary policy instruments and the instruments are usually under the control of the monetary authority. The policy instruments are actually used to influence the path of the selected intermediate target variables that are deemed to be related in a reasonably predictable manner with the ultimate policy goals.

Based on the experiences of the major industrialized countries that pioneered financial liberalization, such as United States, United Kingdom and France, financial reforms have significantly changed the mechanism within which monetary policy operates. As such, the design of financial programs may have to be re-thought because the waves of financial reforms have changed the types of monetary targets and instruments used.

Hence, under a liberalized financial system, the evolution of the monetary policy framework can be broadly characterized by the following developments (BNM, 1999):

- The transition towards a more market-based monetary policy implementation procedures.

- The shift in the monetary policy strategy from monetary or credit targeting towards alternative policy targets.

2.5.1 Market-Based Monetary Policy Instruments

Financial liberalization prompted a reassessment of the instruments of monetary policy. New indirect policy instruments that can be more effective in a liberalized environment are needed to develop and strengthen the monetary policy operations. As countries began to reform their financial systems, the reorientation of monetary control to rely on market-based approach is not only desirable but also inevitable. Reliance on market-based approach actually increases the scope and flexibility of monetary policy for stabilization purposes, while at the same time facilitating deregulation of interest rates, removal of credit controls and the development of financial market. A market-based approach to monetary control can be described by distinguishing between the instruments, intermediate targets and ultimate goals of monetary policy.

Market-based procedures have for several years been the main instruments for conducting monetary policy in the industrialized countries with developed money and inter-bank markets. These procedures have also assumed larger role in many developing countries due to increased volume and freedom of capital movements. In the 1980s a number of Asian countries moved towards market-based instruments of monetary policy, that is a shift from direct to indirect monetary control. Table A.2 in Appendix A provides the summary of primary instruments used by the selected nine countries.

Generally, the monetary instruments of reforms have involved in the redesign of central bank lending facilities and reserve requirement and in the development of market-based monetary operations. Usually the market-based approaches to monetary control have been adapted in the context of progressive modification of

existing monetary instruments (Johnston & Brek, 1999). Prior to reforms, countries generally relied heavily on reserve requirements, liquid asset ratios and subsidized refinancing facilities. Under a liberalized system, central banks of developed as well as developing countries increasingly relied on market-based instruments for monetary and interest rate control.[9] Market based instruments included outright transactions in bills and other securities, various types of reversed transactions such as repurchase agreements in bills and bonds and foreign exchange swap, and transfer of government deposits between the central bank and commercial banks.

The types of monetary instruments used depended very much on the maturity and depth of financial and capital market (BIS, 1998). As for under-developed financial markets, market-based instruments have frequently been primary issues of treasury bills and or central bank bills. This was supported by a restructuring of central bank rediscount windows to allow a greater role for market forces. Extensive financial reforms in 1980s caused many developing countries in East Asia and Latin America, to largely rely upon open-market operations that is through buying and selling of government bills and securities. These countries also reduced their dependence on reserve requirement.

The introduction of more market-based monetary controls along with the move to promote financial market development and capital mobility raised a number of issues. The introduction of new instruments has shifted the interest sensitivity of money demand. A liberalization of interest rates on bank deposits resulted in broad money becoming less sensitive to changes in the general level of interest rates. Moreover, the removal of credit ceilings that constrain portfolio allocation resulted in

[9] Although interest rate controls were significantly relaxed, in many developing economies it was not completely eliminated and in some cases guidance to lending were retained (Johnston & Brekk 1999).

portfolio shifts and the liberalization of interest rates reduced cash holdings by the public.

In a liberal environment, the impact of a change in interest rates on monetary aggregates and credit depended very much on the responses of financial institutions in adjusting their rates and on the portfolio responses of individuals and firms. For example, when interest rate is liberalized on time deposits, private agents may shift their asset from currency and demand deposits to time deposits thus raising the velocity of narrow money but lowering the velocity of broad money.[10]

Increased capital mobility will also have a number of operational implications for the design of monetary policy frameworks and on the use of different monetary instruments. According to Mulayana (1995), high capital mobility alters the effectiveness of different monetary instruments in achieving the objectives of monetary policy. For many developing countries, the increase in capital mobility has posed major challenges on the conduct of monetary operations. Such developments have implications on the behavior of financial aggregate and thus on the design of monetary policy operation.

Johnston & Brek (1999), as well as Dekle & Pradhan (1997) noted that the controllability of monetary aggregates become more difficult due to the development in the financial market. The development of money, bond and equity markets would result in the availability of new, attractive assets such as foreign assets and domestic stocks and bonds. These developments along with new market instruments have expanded the array for financial opportunities and thus created

[10] The velocity of money is defined as nominal income divided by the quantity of nominal money. The definition for broad money and narrow money for Malaysia can be obtained from Tables B.1 and B.2 in Appendix B.

instability in the money demand behavior. This has been proven in number of studies (Tseng & Corker (1991), Mulayana (1995), Dekle & Pradhan (1997) and (Johnston & Brek (1999)), whereby in 1980s the structural changes in the financial markets of the SEACEN countries caused instability in the money demand behavior in this countries.

2.5.2 Market-Based Monetary Policy Operations

Financial liberalization also had important implications on the operating procedure of monetary policy. The central bank must implement an operating procedure that enables it to achieve the desired level of the targeted variable. Reserve requirement has traditionally been viewed as an integral part of the procedure. An operating procedure using bank reserve can be characterized, at the two ends of the spectrum, as setting either the price (interest rates) or the quantity (money reserve) so as to achieve the intermediate target (IMF, 1990).

Whether the management of reserves should be directed towards maintaining a particular quantity or interest rate depends on the nature of the shocks that affects the demand for reserves. Batten & Blackwell (1990) and Stuart (1992) have studied separately on this matter. Both studies agreed that if shocks to reserve reflected predominantly economic growth, then central bank should maintain a particular reserve. On the other hand, if the shocks are primarily to the demand for money, then the central bank should focus on dampening the fluctuations in short-run interest rates.

In 1980s, shocks to the demand for money have become more prevalent in the developed countries.[11] In these countries, the traditional view on reserve requirements no longer holds. Stuart observed that the reserve requirement is no longer seen as a vehicle to directly control the money stock. Furthermore, he pointed out that the reserve-operating procedure is more effective in dealing with spending disturbances while interest rate operating procedure is more effective in dealing with portfolio disturbances.[12]

During that time, many developed nations such as United States, United Kingdom and Japan, reduced the role of quantitative credit and money allocation and placed more emphasis on influencing short-term interest rates as the main channel for implementing monetary policy. However, interest rate operating procedure requires close control over short-term interest rate and as such reserve requirement may prove useful or even necessary in facilitating this control. As a result of portfolio shocks, reserve requirement now plays a different role, that is, facilitating an interest rate operating procedure.

2.5.3 Monetary Policy Strategies

Owing to the above developments, the relationships between money and credit with final goals that existed during the pre-reform phase became less reliable following financial reform. It is now very difficult for central bank to formulate monetary and credit targets that can act as benchmarks in macroeconomic adjustments programs.

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[11] Financial innovation as a result of financial liberalization during the 1980s has generated increased shocks to the demand for money.

[12] Spending disturbances are caused by unexpected changes in consumer or business spending while portfolio shock is caused by frequent shocks in money demand emanating from portfolio shifts.

The central bank has to decide whether to target prices (interest rates) or quantities (monetary or credit aggregates). The central bank should select a target that has the best empirical relationship to the ultimate policy goals of securing sustainable growth and stable prices. In other words, the selected target must be able to minimize the deviation in output and prices from their objective levels.[13]

Moreover, the central bank must also be able to use the selected target as an information variable to provide guidance for the conduct of monetary policy. Under a liberalized financial system, four monetary strategies can be identified. The strategies are monetary targeting, interest rate targeting, exchange rate targeting, and inflation targeting. Whatever strategies selected, for it to be effective there must be a strong and reliable relationship between targeted strategy and the ultimate goal variables.

Monetary targeting is appropriate if the link between the money supply and prices or income is reasonably predictable and stable. In other words, the velocity of money circulation must be reasonably stable so that the growth of money supply will have predictable relationship with the ultimate goal variables. Monetary targeting was adapted by the industrialized countries in second half of 1970s. The Asian countries followed suit in the 1980s. Initially there was widespread agreement that fluctuations in money did contain potential useful information about the future income and price movements.

However, in the 1980s (for industrialized countries) and 1990s (for Asian countries), financial deregulation and innovation caused instability in the money demand

[13] The deviations could result from a variety of disturbances including shift in the public's portfolio references and changes in terms of trade.

behavior and thus weakened the relationship between monetary aggregates and the goal variables. According to Mishkin (1999), the growing instability of the relationship between monetary aggregate and goal variables such as inflation and nominal income meant that the monetary strategy was doomed to failure. Consequently, most of the developed nations abandoned the monetary strategies in the 1980s. Moreover the central banks of these countries found that it was difficult to control the broader monetary aggregates like M2 and M3 and this raised some pertinent questions about the ability of monetary target to serve as a communication device.

As for the Asian countries, even though they continued to monitor closely the monetary aggregates, their intermediate strategy has shifted to short-term interest rates (refer to Table A.3 in Appendix A).[14] Short-term interest rate targeting seems appropriate if there is a direct relationship between interest rates and the level of income and prices. An important reason for the Asian countries to pursue an interest rate policy is that the central banks of these countries are able to influence interest rates much more effectively and rapidly than they can influence other policy targets such as money supply or the volume of credit.

Countries like United Kingdom, Canada, Australia, New Zealand and Korea, have switched their strategy from monetary targeting towards inflation targeting. Mishkin further stated that the inflation targeting enables monetary policy to focus on domestic consideration and to respond to shocks to the domestic economy. Under this strategy, velocity shocks are largely irrelevant because the monetary policy no longer relies on a stable money-inflation relationship. Indeed, an inflation target

[14] Singapore is not included, as it concentrates on exchange rate strategy.

allows the monetary authorities to use all available information and not just one variable to determine the best settings for monetary policy.

Singapore and France concentrated on exchange rate targeting. When a country's economy is heavily dependent on overseas trade, it might be appropriate for the monetary authorities of these economies to establish a target exchange value for its currency. Since, the exchange rate is very much dependent on the domestic rate of inflation, targets for exchange rate cannot be achieved unless the rate of inflation at home is first brought under control. Therefore, this strategy is deemed to be useful especially in keeping inflation under control and to encourage integration of the domestic economy with its neighbors.

Japan and United States pursued an implicit target strategy based on a wide range of monetary indicators. Under this eclectic targeting strategy, there will be no explicit nominal anchor such as a target rate for the monetary aggregates, interest rates, exchange rate or inflation. It is primarily a forward looking behaviour in which there is a careful monitoring for signs of future inflation, coupled with periodic "preemptive strikes" by monetary policy against the threat of inflation. According to Mishkin (1999), since the eclectic strategy does not have a nominal anchor, it is best described as a "just do it" policy regime. It differs from inflation targeting, as it does not have a nominal anchor and is much less transparent in its monetary policy strategy.

2.6 The Effects Of Financial Liberalization On The Role Of Money In The Monetary Policy Process

In the 1980s, the debate in the industrialized countries was mainly to identify to what extent monetary aggregates could be used as an intermediate target to achieve monetary policy's ultimate goals. Various empirical findings such as Goodhart (1989), Friedman & Kuttner (1992), Becketti & Morris (1992), Estrella & Mishkin (1997) and Mishkin (1999) have suggested that the effectiveness of monetary aggregate as an intermediate target highly depended on the strength of the relationship connecting money to income and prices. On the other hand, the relationship between money and the economic variables depended on the degree of price flexibility, the interest and wealth elasticity of aggregate demand and more importantly the public's money demand behavior and the bank's money supply behavior. Therefore, any changes or development in the financial sector may alter the equilibrium relation between money, prices and income in ways that are hard to predict. Such changes would also lead to an increase in the volatility of the relationship between money and the economic variables.

There was a wide spread agreement among economists that before 1980s, movement in the quantity of money helped to forecast changes in national output. They also claimed that fluctuation in money did contain some potential useful information about future income and price movements. Moreover, during this period the adoption of monetary targeting was also seen as a response to the failing of economic policy in the early 1970s. The collapse of the fixed exchange rate system of Bretton Woods, the worsening of the inflation-unemployment trade-off and the failure of interventionist policy, called for a new approach. Monetary targeting seemed to be the most appropriate measure at that time because it was believed

that inflation can be controlled by keeping money under control. This generally accepted usefulness of money, as an economic indicator is one important reason why many developed countries continued to monitor the monetary aggregates despite significant changes in the economy and financial markets.

However, in the 1980s and 90s, economists of the industrialized nations such as Friedman, Kuttner, Mishkin and Goodhart along with others challenged the above view. As stated by Goodhart, just as monetary aggregates became closely targeted, they began to perform less reliably as predictor of inflation condition or of the state of aggregate demand. The empirical investigation was based on sample periods including 1980s, suggested that money has lost its ability to forecast economic activity. It is important to note that, 1980s were period where substantial liberalization occurred in most of the industrialized countries especially in their financial system. The destructive impact of interest rate deregulation on the predictability of the relationship between the monetary aggregate and economic activity necessitated major changes in the implementation of monetary policy.

Kuttner & Friedman (1992) studied whether fluctuations in money or interest rate are useful for predicting subsequent fluctuations in income or prices. Their aim was to find out whether there is any reliable exploitable connection between money and either income or prices. The Sim-type auto-regression test was used to identify whether fluctuations in money in the United States contain any information about future movement in income or prices. Their study was based on three-sample period i.e. 1960-79, 1960-90 and 1970-90.

For the sample period 1960-79, their findings show that, monetary base, narrow money, broad money and credit, each contain information about future income

movements. However, when the sample was extended to include data from 1980s, above result no longer holds. In the sample period focusing 1970-90, there is completely no evidence to show that fluctuations in money contain any information about subsequent movements in income or prices.

As for the interest rate, the relationships between the commercial paper rate and treasury bill rate with income and prices have also changed with the passage of time. However, the changes have been in the direction of stronger ability to predict income and prices. Under liberalized system, the two-interest rates seem to contain incremental information as compared to the period prior to 1980s. The study also concluded that in the long run the relationship between money and the economic variables no longer holds when the data from 1980s are included. In the absence of evidence indicating money and income are co-integrated, the necessary relationship to warrant using money as the focus of monetary policy disappears.

Becketti & Morris (1992) also found that in the United States, money's predictive power typically declines when data from the 1980s are included. Based on their review on earlier research works, they found that the development in the financial markets in 1980s had the potential to alter the relationship between money and future real growth.[15] Such development, reduced money's ability to forecast economic activity. They advocated the possibility that in the 1980s the relationship between money and output has temporarily changed and thus caused temporary reduction in money's predictive power. It has been noted that during the 1980s the Federal Reserve changed its operating procedure by emphasizing on reserve, which may have caused a powerful effect on the money-output relationship. To prove this point, Granger test was used and data from the 1980s were excluded and

[15] During the 1980s, substantial financial liberalization process took place in the developed countries.

the result was significant at 2 percent level implying that money still forecast economic activity.

Becketti & Morris also extended their research to identify if there is any change in the nature of the relationship between money and output in the 1980s as such information is useful in policy making. Based on four Chow tests performed, none detected any change in the relationship between real growth and other variables after 1980s. However, when they restrict the Granger test regression by excluding money and then compared the forecast of real output to those of the original regression that included monetary aggregate, the forecast that included money seem to provide more useful contribution to the forecast of real growth.

Issing (1997) investigated the role of monetary aggregate as an intermediate target based on the German experience. For more than two decades, Germany has been using monetary aggregate as its intermediate target. Since 1988, the Bundesbank decided to make the broad money aggregate M3 as the centre of its deliberations. This money stock has worked well to date although with the application of some flexibility and careful interpretation. According to Issing it was possible for the Bundesbank to adhere to its chosen strategy because there was an adequate degree of stability in the demand for money in Germany. Even the sharp break of the German unification caused only a temporary disruption of the basic macroeconomic relationship but no permanent instability in the demand for money.

It was possible for Germany to maintain a stable demand for money because the regulatory framework in Germany largely remained unchanged. The liberalization of the financial markets and the cross-boarder money and capital movements was

largely computed since the beginning of the 1970s and thus seems to be a key factor in explaining why monetary conditions were more stable in Germany.

Finally, he concluded that as long as the monetary authorities succeeded in reducing uncertainty about inflation and its expected level by following a credible and consistent money supply policy, any sudden changes in the inflation would be less common. And the subsequent portfolio shifts will be muted by the anticipation that the inflationary shock and volatility will not be persistent and there is less incentive for financial innovation. Even if there is any exogenous financial innovation, which may jeopardize the stability of monetary relationship, the monetary target could still prove to be more superior to other monetary strategies, provided it is able to react fast and forcefully to such development.

Estrella & Mishkin (1997) researched to study whether monetary aggregates have some value as information variable. Just like their earlier proponents, their empirical results suggested that, in the United States there is lack of stability in the money relationship since 1979. They also claimed that the monetary aggregate falls considerably short of performing its various roles in monetary policy. Their analysis showed that, whatever informational content monetary aggregate had prior to 1980s do not seem to hold in the 1980s and 1990s. In other words, monetary aggregates could not perform in a straightforward manner as information variable. Hence, it could not be used as part of a strategy to increase the transparency of monetary policy to the public and the markets.

Estrella & Mishkin have highlighted the fact that the inability of monetary aggregate to be used as a guide to monetary policy could be due to frequent changes in the velocity that alters the relationship between money growth and nominal income. It

has been noted that lower the velocity shock better will be the role of monetary aggregate in the conduct of monetary policy .

Based on the above discussion, it is quite clear why currently very few central banks continued to attach greater importance to monetary targets. The shift away from monetary targeting reflected the common problem faced by central banks (Bundesbank is an exception) that is rapid evolution in the economy and financial system which resulted in the inability of the central banks to target a particular monetary variable to achieve ultimate goals. On the contrary, the stable monetary conditions in Germany enabled the Bundesbank to continue to rely on monetary targeting.