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Monetary Policy and Commercial Banks: An Overview

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ABSTRAK

Hubungan antara dasar kewangan dengan aktiviti ekonomi merupakan satu soalan asas ekonomimakro. Ahli ekonomi telah mengemukakan beberapa pendekatan untuk menjawab persoalan ini. Pendekatan tradisional memberi tumpuan penting kepada bahagian liabiliti dalam kunci kira-kira bank. walau bagaimanapun, pendekatan ini menjadi kurang sesuai dengan bertambahnya bilangan pengganti wang yang didefinisikan secara konvensional dalam portfolio pengguna. Sekarang ini, diskusi hubungan antara dasar kewangan dengan aktiviti ekonomi telah berlanjutan untuk mengambil kira catuan kredit dan struktur bank. Minat untuk menerokai kemungkinan rantaian antara bank Islam dengna dasar kewangan dan proses pengurangan kawalan dalam sistem bank telah meningkat. Dengan itu, peranan penawaran wang sebagai sasaran segera dasar kewangan telah menjadi lemah. Pengurangan kawalan bank perdagangan telah menukar "transmission mechanism" bagi dasar kewangan daripada penawaran wang kepada kadar faedah dan kredit bank.

ABSTRACT

The relationship between monetary policy and economic activity is one of the basic questions of macroeconomics. Economists have addressed this question in a number of ways. The traditional approach focuses on the importance of the liability side of the bank balance sheet. However, the traditional approach becomes less relevant as the number of substitutes for conventionally defined money increases in consumer's portfolio. Recently, discussion on this relationship has gone further to include both credit rationing and bank structure. Interest has also grown in exploring the possible links between Islamic banks and monetary policy, and the deregulation process in the banking system. As a result, the role of money supply as an operating target of monetry policy has been undermined. The deregulation of commercial banks has changed the transmission mechanism for monetry policy from money supply to interest rates and bank credit.

INTRODUCTION

The relationship between monetary policy and economic activity is one of the basic questions of macroeconomics. Economists have addressed this question in a number of ways. The traditional, and most familiar analysis of monetary policy focuses on the quantity of the medium of exchange, arguing that the Central Bank policy can affect the economy only through its effect on this quantity. The liability side of the bank balance sheet receives special attention in this approach, because demand deposits are a large part of conventionally defined money.[1]

The quantity of the medium of exchange is certainly not without significance. However, as originally argued by Gurley and Shaw, the traditional approach becomes less relevant as the number of substitutes for conventionally defined money increases in consumers' portfolios. An alternative to the traditional approach is to take into account bank assets as well as bank liabilities. In this alternative approach, monetary policy matters to economic activity primarily because it affects the structure of assets and liabilities, not because it only affects the quantity of the medium of exchange. This differentiation may be of practical importance, for example in the implications for monetary policy of changing bank regulations or changing banks structure.

Recently, discussion of the question of the relationship between monetary policy and commercial banks has gone further to include both credit rationing and bank structure. Interest has also grown in exploring the possible links between Islamic banks and monetary policy, and the deregulation process in the banking system. This interest reflects the ongoing beliefs of economists and policy-makers that the interest-free banking and the role of market forces deserve serious attention. This paper is directed toward that purpose.

So, in this paper, developments in the study of the relationship between monetary policy and commercial banks will be surveyed. The current position will be placed in perspective. The survey will be divided into two main parts, the first part reviews that early literature and the second part discusses more recent work.

EARLY STUDIES

The discussion of this section begins with literature contributed by Fisher, Keynes, and Friedman-Schwartz. They have provided a platform for analysis

of the relationship between monetary policy and commercial banks. Then, this section continues by discussing the counter-argument, led by Gurley-Shaw and others, which stresses the importance of the financial institutions, especially in the loanable funds process. The relevance for our purpose is that the subsequent sections and also the current studies incorporate many of the ideas in this literature.

THE IMPORTANCE OF MONEY SUPPLY

The literature on monetary policy and commercial banks as interrelated phenomena is not new. It can be traced back to Fisher (1991).[2] He clearly states that bank liabilites are special because they serve as money. The expansion of these liabilites produces a new term known as credit creation. However, the expansion of credit is limited by banking policy, such as variation in the reserve to deposits ratio. The aim of this policy is to avoid the riskiness of insolvency and insufficiency of cash.[3] It literally means that the Central Bank can directly expand or contract money supply at will through monetary policy.

The commercial banks did not have such an explicit important role in Keynes's General Theory (1936). However, commercial banks have been seen as an integral part of the broad picture, that is, as intermediaries betweem savers and investors. He claims that the creation of credit by the banking system allows investment to take place with an equal amount of savings. In this simple approach, monetary policy operates through changes in the rate of interest. The change in the volume of money, via the liquidity effect, alters the rate of interest.[4] Thus, the interest rate is viewed as an indicator of the stance of monetary policy.

Friedman and Schwartz (1963) argue that the Central Bank can exercise effective control over the money supply. Their argument is based on the assumption that the behaviour patterns of the banking system are stable and predictable enough to permit the Central Bank to control the money supply. As an example in the Great Depression 1929-1933, they concluded that the Central Bank should have emphasised the money supply, and as a consequence, the significance of all other aspects of commercial banks was de-emphasised.

In summary, Fisher, Keynes, and Friedman and Schwartz have provided a platform for exploring the relationship between monetary policy and commercial banks. The commercial banks have been given attention because part of their liabilities are included in the money supply.

LOANABLE FUNDS APPROACH AND CREDIT CREATION

The above discussion treats the commercial banks as being of secondary importance. Beginning with Gurley and Shaw (1956), an attempt was made to redirect attention towards the analysis of the role of finance and particularly of financial institutions in economic development which has important implications for monetary theory. They try to emphasise the role of financial institutions in the credit supply process as opposed to the money supply process.

They began by discussing the following difference between developed and developing countries. In the former, there typically exists a highly organised and broad system of financial institutions designed to facilitate the flow of loanable funds between surplus units and deficits units. Hence, the implication is that the role that financial institutions play in improving the efficiency of intertemporal transactions is an important factor governing general economic activity.

The next argument is that restricting attention to the money supply makes it impossible properly to characterise the link between monetary and real variables, and that this distortion worsens as the economy evolves financially. In the early stages of financial development, Gurley and Shaw noted, commercial banks are the only major form of financial institutions, so that most financial institutions provide both transactions and lending facilities. In this environment, money supply might be a useful proxy for the monetary aggregate since the supply of inside money (bank liabilities) is closely related to the whole liabilities of financial institutions.

However, as the financial institutions evolve, and other lending institutions with nonmonetary liabilities arise, the exclusive focus on money supply becomes less justified. The importance of money diminishes for two reasons; first, the money supply becomes a less exact measure of the flow of financial institutions' credit, and second, the liabilities of the nonbank financial institutions act as substitutes for money in transactions, pre-cautionary and speculative demands.

They thus show that financial competition may prevent the growth of the commercial banks and weaken the grip of monetary policy on the economy.[5] At the same time, other financial institutions would become more attractive channels for transmission of loanable funds. Therefore, they suggest that the controlling powers of the Central Bank should be extended beyond the commercial banks to other financial institutions.[6] As a result, the debate on the effectiveness of monetary policy has ranged widely, including such issues as whether existing controls over commercial

banks are really discriminatory, given that commercial banks enjoy the privilege of creating money, (see Aschheim 1959) and whether the imposition of credit controls on financial inter-mediaries would improve the effectiveness of monetary policy or the competitive position of the commercial banks (see Alhadeff 1960).

An extention study was undertaken by Smith (1956) to show the effects of monetary policy on the supply of loanable funds. Three factors have been identified, first, through the changes in the value of bank assets, second, through the changes in interest rates, and third, the difficulties in marketing new issues of securities. For the first effect, he claims that the increase of interest rates, as a result of the Central Bank action, encourages the banks to sell short-term securities to meet an increasing demand for credit. This is especially so for banks which are required to allocate assets to the minimum liquidity requirement, and commonly hold large portfolios of short-term government securities.[7]

In the second effect, as a result of a small change in interest rates, credit restraint can be effective in controlling funds borrowed from banks. First, this works through the rationing of credit and screening of borrowers. For example, this could occur if the demand for credit increases substantially while at the same time the aggregate volume of banks' reserves is held constant by the Central Bank policy. Although the immediate effect is that the commercial banks have to ration credit by tightening credit, in the long-run lending rates have to be changed. Second, banks may sell some of their liquid assets in the open market. Hence, interest rates in the open market will rise, and the interest they charge borrowers will also increase.

In the third effect, tight credit conditions may discourage the floatation of new issues of securities.[8] A large quantity of unsold securities may result in security prices falling. The rapidly rising interest rates may affect the restrictive credit policy. This shows that the extent to which monetary policy may affect loanable funds depends on the existence of a well-developed money market and the abolition of ceilings on lending rates.

Tobin (1963) tries to incorporate the ideas of Gurley and Shaw into the theory of credit creation. According to his argument, the essential function of commercial banks is to satisfy simultaneously the portfolio preferences of surplus units and deficit units. These asset transformations produce an expansion of the liabilities of the commercial banks.[9] Without monetary policy, the expansion of credit and deposits is limited by the

availability of assets at an interest rate sufficient to compensate banks for the costs of deposits.

When monetary policy, for example reserve requirements, is effective the marginal rate of return on bank loans and investment exceeds the marginal cost of deposits. In these circumstances, a reduction in the required reserve ratio encourages banks to acquire additional earning assets.[10] In general, this process reduces interest rates and hence, induces the public to hold additional deposits.

The major arguments and findings from the idea of Tobin are, first, the interest rate difference, that is, between lending rates and deposit rates, allows the bank reserves to generate the additional loans and deposits. Second, the willingness of commercial banks to hold excess reserves and to loan up depends on the availability of assets to banks. Third, the commercial banks should adjust both assets and liabilities as a result of the changes in monetery policy.

THE CASES OF DEVELOPED AND DEVELOPING COUNTRIES

The idea that has been brought forward by Gurley and Shaw has manifested itself differently in different circumstances; thereby producing two separate, but very important regimes, namely, developed and developing countries.

In developed countries with highly organised money markets, a broad consensus on the nature of the relationship between monetary policy and commercial banks has existed for sometime, see for example Mann (1968), Meltzer (1969), Park (1972), and Laidler (1978). When financial markets are highly organised, an expansionary monetary policy undertaken, for example, through an increase in bank reserves supplied by the Central Bank via an open market purchase, leaves the commercial banks with too much money in its portfolio relative to other assets. In restructuring to attain portfolio equilibrium, commercial banks increase the amount of credit, thereby lowering their respective rates of return. In this way, an open market purchase of securities results in a decline in interest rates. Therefore, interest rates represent the key link between monetary policy and macro-economic objectives.

In developing countries on the other hand, the picture is somewhat different, see Montiel (1991).[11] In the first place, the menu of assets available to commercial banks in very limited. The organised money markets in which the Central Bank can conduct open market operations scarcely exist in many developing countries. In general, individuals can hold currency,

savings and fixed deposits issued by the commercial banks, and they can borrow from commercial banks. However, informal markets will emerge, resulting in financial disintermediation through informal markets for deposits and loans. Finally, even in the case of those assets and liabilities available to individuals, such as demand deposits, saving deposits and fixed deposits, and bank loans, formal regulations often determine the interest rates paid and charged by the commercial banks, although a variety of methods of avoiding interest rate controls typically tend to emerge.[12]

Park (1973) argues that monetary policy in such a regulated environment operates primarily through a non-price credit-rationing channel. One possible explanation for this outcome is the existence of an insatiable demand for credit at the prevailing interest rates in the credit market that remains continuously unsatisfied. In these circumstances, borrowers will be constrained not by the cost of borrowing but by the unavailability of credit. On the other hand, the role of interest rates is still pertinent depending upon the extent of avoidance of direct controls through informal and less-regulated markets. Changes in the supply and allocation of credit, brought about through formal regulations, have direct effects on aggregate demand. Hence, those commercial banks who have made credit available to borrowers are able to expand demand.

MCKINNON-SHAW AND NEO-STRUCTURALIST APPROACHES

In the early 1970s, new development and innovations in the instruments of monetary policy emerged such as interest rate ceilings, heavy reserve requirments on bank deposits, and compulsory credit allocations. Accordingly, McKinnon (1973) and Shaw (1973) conclude that in such repressed commercial banks, real deposit rates are often negative. As a consequence, first, the flow of loanable funds through the banking system is reduced, forcing potential borrowers to rely more on self-finance. Second, lending rates vary arbitrarily from one class of borrowers to another. Third, the process of self-finance is weakened. If the deposit rates are negative, firms cannot accumulate liquid assets in preparation for making discrete investment. Fourth, when firms become illiquid, open market operations require monetary stability. In consequence, McKinnon and Shaw proposed the use of an alternative monetary policy, that is, by increasing nominal deposit rates.[13] Concomitant with this resulting increase in the amount of real deposits, commercial banks are able to increase the supply of real bank credit.

An extention to this approach has been introduced by Kapur (1976), Galbis (1977), Mathieson (1980) and Fry (1980).[14] In his analysis of deposit rates as a stabilization policy instrument, Kapur (1976) makes three assumptions. First, commercial banks are in competitive equilibrium with zero excess profits. Second, the Central Bank pays no interest on bank reserves. Third, the costs of the monetary system are a constant fraction of the real money supply. Hence, in order to maintain the banks' profits, any change in deposit rates requires a concomitant change in lending rates. However, the expected real lending rate cannot exceed the real rate of profit on working capital, otherwise firms would not be willing to borrow from the banks.[15]

A new approach to examining the relationship between financial institutions and real development was postulated by Galbis (1977). Two main characteristics of his new approach are aggresive regulation taken by the government and the existence of fragmented economies. In the latter, the surplus units save in the commercial banks depends on the real deposit rates which represent the opportunity cost of self-investment. On the other hand, the deficit units borrow from the commercial banks depends on the real lending rates.[16] For an equilibrium between the supply and the demand for loanable funds, a higher level of lending rate is expected in a condition where the marginal propensity to consume equal to the marginal efficiency of investment.

However, government regulations on the commercial banks have contributed significantly to the inefficient use of funds. For example, if the deposit rates are fixed by the Central Bank below their equilibrium levels, then the lending rate is also above its equilibrium rate. The widening gap between lending rate and deposit rate produces an excess demand for funds, so that the market does not automatically clear.[17] So, it should be noted that, when interest rates are highly regulated, a kind of equilibrating credit restrictions through credit rationing is expected to be workable.

However, Mathieson (1980) argues that the excess demand for bank credit can be satisfied by increasing deposit rates. A higher lending rate is also required in order to ensure at least a zero level of profits in the banking system. Since deposit rates and lending rates increase sharply once interest rate ceilings are removed, there may be a concern that banks holding a large portion of their assets as long-term loans which bear the old lending rates may find it unprofitable to pay the new competitive deposit rates. The effect would be on deposit withdrawals. As a consequence, the Central Bank must either accept the possibility of

widespread failures or must inject funds into the commercial banks. The first solution would unquestionably create the type of chain-failures which distorts the flow of funds. The second solution may cause the Central Bank to lose control over the money supply.

As the effects of financial reform are quite costly. Mathieson suggested that interest rates should be gradually changed, with deposit rates moving in line with the expected rate of inflation and the lending rates changing more rapidly than the expected rate of inflation.

Fry (1980) argues that interest rates are usually held below equilibrium levels and the Central Bank does not permit interest rates to move sufficiently to clear financial markets. Hence, the Central Banks creates the supply of credit more or less independently of deposits.[18] If ceiling rates are also imposed on lending, then non-price credit rationing must occur.

Thus the McKinnon-Shaw approach maintains that the controlled raising of interest rates need not be contractionary, because in a rationed regime the induced increase in deposits will result in an increase in bank loans. On the other hand, the neo-structuralist approach, for example Taylor (1981), van Wijnbergen (1983), and Buffie (1984), emphasises the importance of informal loan marekts when bank interest rates are subject to the Central Bank ceiling.[19] In this case, they argue that increases in bank interest rates will shift out funds from informal markets, thereby increasing the marginal cost of funds and resulting in a contractionary effect on the net supply of credit.[20] However, if higher bank interest rates result in a shift out of cash rather than out of the informal market, the net supply of credit will increase.

RECENT STUDIES

The discussion of the recent literature will be divided into five sections. It is useful to begin with discussion of the rationing of credit in imperfect markets. This is so because much of the new work on the relationship between monetary policy and commercial banks rest on insights that come from this study. Recent work on bank structure and monetary policy is surveyed next. The approach is to address the implications of increased competition for the effectiveness of monetary policy. The following three section discuss, first, the basic features of what constitutes a workable and productive theory of the banking firm. Second, the conduct of monetary policy in an Islamic banking environment is explored. The final section

examines analysis which has focused directly on the role of monetary policy in a deregulated environment.

CREDIT RATIONING AND IMPERFECT INFORMATION

The removal of credit and interest rate ceilings, and the supporting financial deregulation would change the transmission channel for monetary policy from predominantly direct credit rationing as discussed in Sections 2.3 and 2.4 to predominantly price rationing through market-determined interest rates. This idea was introduced by Jaffee and Russell (1976), and has been popularised by Stiglitz and Weiss (1981).[21] Because of asymmetric information between lenders and borrowers, much ofthe analysis of credit rationing focuses on a situation of imperfect information.

Stiglitz and Weiss (1981) produce a convincing explanation for why there may be credit rationing in markets with imperfect information. Their argument starts with a claim that raising the lending rate charged would not produce a proportionate increase in the receipts of the lender, because the probability of default may rise. If the probability of default rises sufficiently, the rate of return to the lender may decrease. Therefore, at the quoted lending rate, the lender's expected return is maximised, (as shown in Figure 1).

In a situation where the demand for credit at point B, exceeds the supply of credit at point A (credit rationing may persist), lenders will raise the lending rate charged, which will increase the supply and decrease the demand, until the market is cleared at point C (Figure 2). However, at the quoted lending rate no bank has an incentive to raise its lending rate, because doing so only reduces its receipts. Thus, after the quoted lending rate point r_l^*, further increases in the lending rate may lower the lender's expected return, making the loan supply curve bend backwards. In this case, when the loan demand and supply curves do not intersect, rationing arises-where some borrowers are arbitrarily denied credit. Therefore, for credit rationing to arise, it is required that the relationship between the expected return of the banks is not monotonic with respect to the lending rate. The relationship between lending rate charged and the expected return may not be monotonic because of adverse selection effects and adverse incentive effects. The adverse selection effects occur when the mix of borrower changes adversely following an increase in the lending rate; good quality borrowers drop out of the market. The adverse incentive effects occur if borrowers undertake riskier projects when the lending rate is increased.

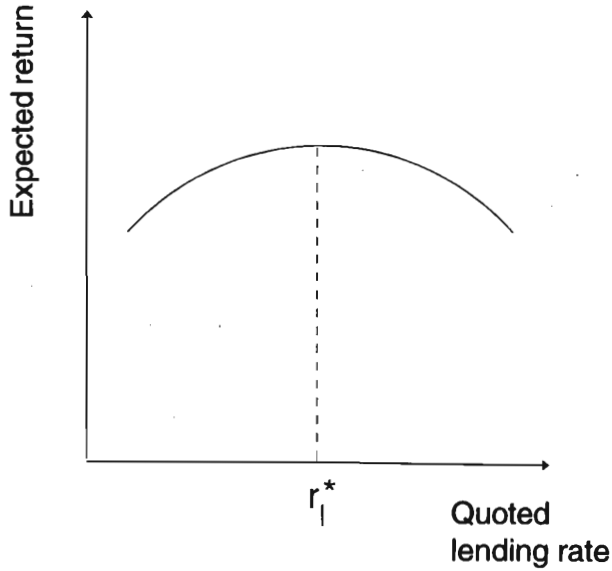

FIGURE 1. The relationship between quoted lending rate and expected return to the bank

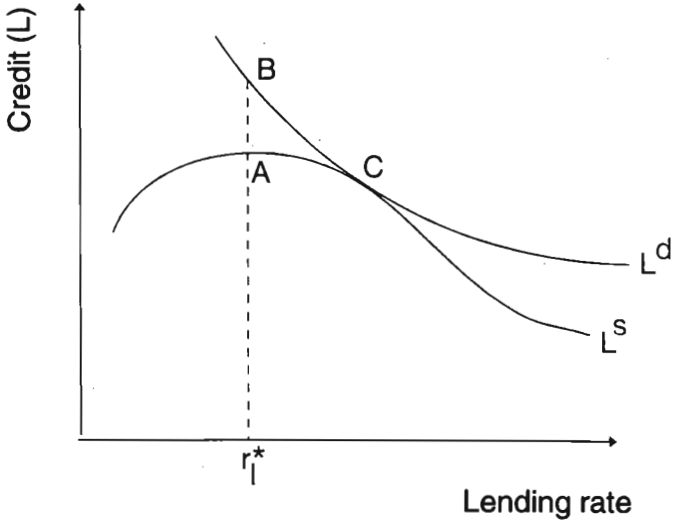

FIGURE 2. Credit Rationing Model (Stiglitz and Weiss 1981)

Subsequent papers concentrate on critism levelled against credit rationing theories, especially on informational asymmetries posed between borrowers and lenders, and on why an increase in the lending rate might have adverse selection and incentive effects, so that banks might choose not to increase the lending rate charged, even when there is an excess demand for credit. For example, Williamson (1987) constructs a credit market model, and shows how it is possible to explain the type of credit rationing defined by Stiglitz and Weiss, without a priori restrictions on financial contracts. Credit rationing may occur, (with an assumption that borrowers are identical ex ante, but lenders vary according to their opportunity costs of funds), because the expected default costs stemming from costly state verification may make it prohibitively expensive for borrowers to obtain funds from lenders with high opportunity costs.[22] With this assumption, some borrowers may receive loans, while other borrowers do not. This is in contrast to the type of credit rationing characterised by Jaffee and Russell (1976), and Gale and Helliwig (1985) where borrowers are rationed in the sence that they cannot borrow all they would like given the quoted lending rate. As with Gale and Hellwig (1985), banks have to face an increase in the cost of funds because of the informational problems.

In contrast to Stiglitz and Weiss, Mankiw (1986) analyses a credit market in which borrowers have greater information on the probability of default than do lenders and shows how small increase in the riskless interest rate can lead to a large reduction in credit, possibly even a collapse. The phenomenon occurs because the increase in the riskless interest rate pushes up the lending rate, which reduces the quality of borrowers as mentioned by Stiglitz and Weiss.[23] If the lending rate is high enough, the credit market will collapse. Hence, Mankiw suggests that government intervention in the allocation of credit is important, especially in the markets for loans to students, farmers, and homeowners.

The basic credit rationing theory has been extended in a number of different directions to respond to the criticisms and to apply the basic theory in different institutional settings. In the context of a borrower who faces costs of default that exceed the benefits of default, the inability to pay may produce the result that borrowers lose their reputation (see Eaton and Gersovitz (1981)). If the default is caused by the borrower searching out a new source of lending, then the penalty for default is much smaller (see Allen (1983)).

In addition, the default may not occur if the lender has an incentive to postpone a default by extending additional credit to the borrower. The

lender may also promise to provide the borrower with funds, up to a limit, for the term of the agreement (see Sofianos, Wachtel and Melnik (1990)). As has been proposed by Eaton, Gersovitz and Stiglitz (1986), a mutual agreement should be agreed by both parties to avoid default on loans. The lender may refuse to continue to extend further credit on terms of contract which are not acceptable to the borrower. Stiglitz (1972) points out that the cost of bankruptcy must also be taken into account in the mutual agreement renegotiation. The question also arises as to why other banks would not provide the credit, if one bank cut off credit? Here, Stiglitz (1985) argues that when credit has been terminated by one lender, no other lender would be willing to lend to the individual.

Rothschild and Stiglitz (1971) present the argument that the banks could offer a set of self-selecting contracts. Hence, Bester (1985) and King (1986) suggest that credit rationing may also occur when the borrower is required to produce different collateral requirements. However, Stiglitz and Weiss (1986, 1987) find that the equilibrium, in which interest rates and collateral requirements both simultaneously exist, may take two different forms. First, it could be that both types of borrowers adopt the same contract, where interest rates and collateral are not increased. There are only two types of borrowers existing in the market, that is, high-risk and low-risk borrowers. The high-risk borrowers choose a contract with a higher interest rate and lower collateral requirement. Since the interest rate and collateral have not increased, the incentive effects and adverse selection effects respectively are still present.

Second, where there are multiple contracts, some rich borrowers who undertake risky projects may have to accept low collateral, and high interest rate contracts. Thus, as a result of such adverse selection effects, it is desirable to ensure that the expected return on a low collateral contract equals the expected return on a high collateral contract as a measurement of the percentage of each type of contracts.

In summary, the variations in the availabilty of credit have been considered as an important transmission channel for the effects of monetary policy (see Jaffee and Stiglitz (1990)),and Modigliani and Papademous (1987). This view has implications for the choice of monetary aggregates as targets of monetary policy, and calls for more explicit attention to bank regulations, bank behaviour, and credit market conditions in formulating and analysing monetary policy. Villanueva and Mirakhor (1990) also mention that the relative importance of credit rationing and price rationing as channels of monetary policy will be affected not only by the

degree of progress toward interest rate deregulation, but also by the financial structure that governs bank behaviour toward credit allocation.

BANK STRUCTURE AND MONETARY POLICY

The literature on credit rationing implicitly assumed that credit is created through a competitive banking system. This section tries to look at the effects of bank market structure on monetary policy. Current research on the implications of bank market structure incorporates many of the earlier ideas of Aftalion and White (1977).[24] It stresses the effects of monetary policy under both perfectly and imperfectly competitive banking systems.[25]

Hester (1981) claims that increased competition in the banking system will serve to undermine monetary control by reducing the stability of the banking system, thereby decreasing the range of policy options available to the Central Bank. But, Van Hoose (1983) raises another significant issue that had not been addressed, namely the implication of increased competition for the effectiveness of monetary policy. He argues that the short-term effect of policy actions as transmitted via interest rates on securities and loans have two important implications. First, bank structure can affect the types of equilibrium adjustment which follow specific policy instruments, at least to the extent that different structures produce alternative forms of bank behaviour. Second, differences in bank structure and behaviour affect the macroeconomic variables, if the interest rate is the target adopted by the Central Bank.

A surprising implication pointed out by Van Hoose (1983) is that the interest rate instrument does not produce short-term effects in a competitive banking system. The reason is that the 'feed-back effects' via the interest rate are more likely to produce indeterminate equilibrium security rate adjustments when markets are competitive. In contrast, currency and excess reserves can be used as effective instruments under either form of bank market structure.

MODELS OF COMMERCIAL BANKS

In spite of the importance of commercial banks as an important link in the monetary transmission process, there is little consensus as to what constitutes a workable and productive theory of the banking firms. For

example, the neoclassical economists (for example Phillips (1923) and Rogers (1933)) are rarely invoked to explain bank behaviour, primarily because there is so little agreement on fundamental concepts.[26] In the face of conceptual difficulties, some authors like Porter (1961) concentrates on the allocation of banks' funds among various types of assets.[27]

On the other hand, there has been much analysis relating to the impact of bank market structure and bank performance.[28] Both ideas have been combined by Klein (1971) to produce a theory of a banking firm which describes bank behaviour in a monopoly enviroment. Such an environment is mostly determined by bank regulation.[29]

Baltensperger (1980) claims that the model developed by Klein is as a result of the independence of a bank's optimal assets management and optimal liability management. As originally argued by Gurley and Shaw (1960), the functions of banks are those of consolidating and transforming assets. This idea is incorporated into Baltensperger's model. Uncertainty, informational problems, and adjustment costs have also played an important role, especially in the credit market where transaction and information costs are involved.[30]

Imperfect information about various aspects of banks' activities also plays a central role in the model of banks' behaviour. As argued by Santomero (1984), imperfect information should be included in the discussion of banks' assets. King (1986) was the first to examine this view, which argues that the variation in the quantity of bank credits caused by reserve changes might explain the real impact of monetary policy.

The above discussion shows that monetary policy matters by affecting both bank liabilites and bank assets. The empirical evidence produced by King (1986) shows that bank assets do not play a significant role in the transmission of monetary policy. Part of the reason may be due to the insignificance of credit rationing in the model of bank lending.

ISLAMIC BANKS AND MONETARY POLICY

The growing establishment of Islamic banks in 1980s has brought forward two basic issues concerned with the conduct of monetary policy, first, where the banking system is prohibited from paying and receiving interest, and second, where the Islamic banks have to coexist with the conventional banks.[31]

The prohibition of interest, which effectively rules out the existence of debt, means that Islamic banking system has to be entirely equity-

based and work on the basis of profit and loss sharing (see Ahmed (1989)).[32] Given this setting and the available instruments, how would monetary policy be expected to operate in an interest-free banking system.

Under the Islamic system, Khan and Mirakhor (2987b) aruge that the banking operations will undoubtedly be more varied and complex, as compared to the conventional banking system. The viability and profitablity of specific projects being proposed are emphasised, rather than the creditworthiness of the borrower that underlies the conventional banking system. In addition, banks have to consider a different rate of return for each economic project. On the liabilities side, the rate of return on deposits is determined as a proportiion of profit. Therefore, the rate on deposits should be competitive with the interest rate offered by the conventional banks if the Islamic banks have to coexist with the former.

However, issues concerning suitable instruments of monetary policy have been addressed recently in a number of papers. For example, Khan and Mirakhor (1987) examine the implications of introducing a central bank in an Islamic financial system. They suggest that the conventioanl instruments of monetary policy that would still be available to the Central Bank would be the monetary base, required reserve requirement, credit control (the maximum limit for the amount that banks can allocate to profit-sharing activities) moral suasion, and the regulation of profit-sharing ratios between banks and depositors and between banks and borrowers.[33] Other conventional instruments, such as open market operations and discounting policy, as pointed out by Akhram Khan (1982) and Siddiqui (1982) are also applicable if they do not bear a fixed rate of return. In addition, Khan and Mirakhor further argue that the performance of the Central Bank's regulatory, supervisory and control functions can continue to stregthen its influence on the banking system.

A comparison has been carried out by W Khan (1987) involving equity-based banking and interest-based banking, based on the assumptions that the supply of loanable funds is fixed, the number of mutually uncorrelated investment projects is large and the ability of lenders to put money into each project is infinitely small. Initially, if interest rates and profit-sharing ratios are set such that the expected return in both cases are equivalent, lenders will be indifferent between these two facilities and borrower' preferences will determine the choice between the two facilities. However, if borrowers are risk-averse, then the profit-based facility is Pareto-superior to the interest-based facility, and full equity is also superior to any combination of debt and equity, since equity spreads risk more optimally than debt.

He further discusses the model in which lenders can observe the outcome of investment projects only at a cost, and there is a tradeoff between the incentive effects of debt and the benefits of risk-spreading under equity. In general, these models show that the expected monitoring costs are lower under the interest-based facility than the profit-based facility. The reason is that in the interest-based facility, only reported returns below the fixed interest rate are regarded as suspicious by the lenders. The choice of interest-based versus profit-based facility depends on a consideration of the costs of less-optimal risk-sharing versus the benefits of less monitoring costs in the interest-based facility. If the degree of risk-aversion is low, the interest-based facility dominates, perhaps explaining its prevalence in the non-Islamic world and the coexistence of Islamic banks with conventional banks.

A different study has been carried out by Haque and Mirakhor (1987) to show the consequences of risk-sharing between lenders and borrowers on aggregate investment. They claim that with profit-sharing, optimal investment would occur at the point where the marginal product of capital is equal to unity. However, this result is based on the assumption that the profit-sharing ratio offered by a borrower to lenders is independent of the level of investment, a situation which cannot be obtained in a general equilibrium (as argued by Ahmed (1989)). Since the lender's return depends on both the level of profits and the profit-sharing ratio, the value of the latter offered to a lender to provide a minimum level of expected utility would not be independent of the expected level of investment. The general conclusion that the aggregate level of investment would be different with profit-sharing would still hold.

The effect of moral hazard as a result of imperfect information has also been discussed. The imperfect information is only posed by the borrower. Haque and Mirakhor (1987) conclude that market failure need not result from moving to an Islamic system even with imperfect information, if appropriate contingent contracts are used.

MODELS OF FINANCIAL DEREGULATION

In the 1980s, several suggestions have been made to abolish interest rate ceilings and mandated credit allocations, and heavy reserve requirements. A new term, known as financial deregulation, has emerged. The current research in this area tries to identify whether bank deregulation has any consequences for the riskiness of banking. Several authors, like BIS (1984)

and Kaufman (1986) find that the deregulation raises risks in banking. On the other hand, Hall (1984) and Benston (1986) maintain that the riskiness of banking bears no relationaship to deregulation. Although the result is mixed, Melitz and Bordes (1991) suggest that the Central Bank has also to consider the change as a certain risk for their banks, especially the interest risk. In this regard, the link of deregulation to monetary policy can be easily seen. The Central Bank affects interest rate variability by controlling the excess reserves of the commercial banks. For example, an increase in bank reserves brought about by open market purchases of government bonds would decrease short-term interest rates, which if perceived to be a lasting effect, would move along the yield curve to influence the medium-term and long-term rates as well.

In an economy with relatively open foreign exchange markets, but with fixed exchange rates, capital flows would prevent the domestic interest rate from deviating substantially from world interest rates (see Villanueva and Mirakhor (1990)). The resulting capital inflows would negate both the initial reduction in reserves and the initial increase in the domestic interest rates. In these circumstances, the Central Bank do not fully control the supply of money.[34]

Therefore, in a deregulated financial environment the term structure of interest rates is also an important aspect of the transmission mechanism for monetary policy, since financial deregulation is likely to affect the yield curve (see OECD (1990)). Whether the relationship between short-term rates and long-term rates is affected or not depends on two interdependent factors, namely, the direct liquidity effect of the inflationary expectations-monetary policy credibility.

Under the first effect, Browne and Manasse (1989) show that the short-term rates are negatively related to discretionary monetary policy. Under the second effect, two outcomes emerge, first, a credible restricitive monetary policy which is perceived to be anti-inflationary will be likely to reduce the inflation premium built into long-term rates. Second, a contractionary monetary policy that lacks credibility will do relatively little to affect long-term rates. Since, in a deregulated financial market, banks have greater freedom to manage their portfolios, including the maturity structures, any policy-induced increase in short-term interest rates would be dampened by substitution away from long-term assets in the expectation of higher yields.

In response to changes in bank reserves, the short-term rates and the relationship between short-term and long-term rates may also be affected

by the endogenous behaviour of the components of the money multiplier to initial changes in the short-term rates. The changes in interest rates on treasury bills and government securities associated with open market operations affect bank deposits and lending rates, and hence, the currency and excess reserve ratios.

The relative importance of liquidity effects in financially deregulated financial markets can be ascertained from the relationship between long-term and short-term rates (see OECD (1990)). The sensitivity of long-term rates and short-term rates is reduced during financial deregulation. This suggests that financial deregulation increases the relative importance of inflationary expectations in interest rate determination, while the impact of domestic liquidity on the slope of the yield curve becomes weaker.

CONCLUSION

The changing structure and environment in the banking system have changed the transmission mechanism of monetary policy. In the early studies, monetary policy affects economic activity through changes in the supply of money. At the same time, economists have been increasingly concerned with the composition and behaviour of banks' portfolios. Economists like Gurley and Shaw (1960), and Stiglitz and Weiss (1981), share a view that credit can be considered as an important transmission mechanism for the effects of monetary policy. This occurs because bank assets mainly consist of loans.

Recently the developments in Islamic banking and deregulation processes have created large changes in the operations and riskiness of the banking system. As a result, the role of money supply as an operating target of monetary policy has been undermined. Finally, the deregulation of commercial banks has changed the transmission mechanism for monetary policy from money supply to interest and bank credit.

NOTES

1. See Bernanke and Gertler (1987)
2. Johnson (1970) claims that the Fisher idea has provided the intellectual foundations of the Radcliffe position on monetary theory and policy, p. 101.
3. Insolvency refers to the condition when loans are extended with insufficient capital, whereas insufficiency of cash refers to the condition when commercial banks are unable to meet the deposit withdrawals

Because of the riskiness of these phenomena, banks are required to provide a greater amount of capital and cash reserves.

4. Keynes (1936) argues that this special connection arises from the fact that the banking system and the Central Bank are dealers in money and debts, p. 205.
5. Authors, like Birnbaum (1957) and Brainard (1967), still maintain that the growth of nonbank financial institutions has not narrowed the scope for effective monetary control by the Central Bank.
6. A different argument has been introduced by Minsky (1957), to the implementation of the lender of last resort function to the financial institutions and not merely the commercial banks, p. 186. And a similar argument to those of Gurley and Shaw, and Minsky can be found in Smith (1956), p. 606.
7. This is also means that commercial banks can supply more loanable funds by selling government securities.
8. This possibility has also been iscussed in Keynes (1971, pp. 367-369.
9. The expansion of credit is not limited to the ability of commercial banks to acquire additional assets but also to finance the purchase of "old" securities, see Tussing (1966), pp. 5-6.
10. Commercial banks can also obtain additional reserves by borrowing from the Central Bank, and by selling short-term securities. In short, additional reserves are also available at the discount window and in the money market.
11. The same viewpoint can also be found in Khatkhate (1972), p. 533 and Park (1973), p. 399.
12. The desire of developing countries to impose the ceiling rates on deposits and loans may be attributed to (a) the desire of the Central Bank to have an interest rate structure similar to the prevailing in the developed countries, (b) have low and stable interest rates in order to promote economic development, and (c) the notion that savings are insensitive to changes in interest rates, see Park (1973), p. 386. The establishment of Islamic banks is also identifies as one way to avoid the interest rate regulations.
13. Initially, as argued by McKinnon, the economy is in inflationary equilibrium, with high growth rates of money supply and of inflation, and the Central Bank tries to reduce the money supply expansion. Although this policy is aiming to induce an appreciable decline in the expected rate of inflation, the immediate effect is a reduction of real bank credit. This is especially so for developing countries, where firms are heavily reliant on credit from the commercial banks.
14. A comprehensive survey of this approach has been carried out by Fry (1982).
15. Kapur (1976) also assumes that all working capital are financed by the commercial banks, p., 780.

16. Galbis assumes that the surplus units and deficit units are in the backward sector and advanced sector, respectively.
17. The widening gap between deposit rates and lending rates has generally led, (a) to a widening of the existing gap between the demand for and the supply of funds, and (b) to the existence of informal financial markets.
18. The same argument has been raised by Leff and Sato (1980), p. 171. They, further, argue that any changes in the supply of credit are also determined by the government policy to curb the inflation rate and stabilise the balance of payments.
19. The McKinnon approach based on the assumption that the portfolio shift into bank deposits is coming out of assets such as gold, cash and commodity stocks. However, neostructuralists argued that in most less-developed countries there are still existing unorganised money markets, providing the disintermediation, see Van Wijnbergen (1983), p. 434.
20. Here the net supply of credit will dcline relatively because of the shift of funds from informal market, resulting in an increase in bank deposits, a portion of which goes to reserves.
21. Although credit rationing has been mentioned as early as Rosa (1952) and subsequent articles, for example Smith (1956), Tussing (1966), and Jaffee and Modigliani (1969), the emphasis is on non-price credit-rationing and symmetric information.
22. A detailed explanation about costly state verification, where the lender must pay a fixed cost to observe the returns to the borrower's project can be found in Townsend (1979).
23. A rise in the interest rate lowers the average borrower quality, as those with relatively safe projects are the first to drop out, see Stiglitz and Weiss (1981), p. 408.
24. Although there have been many studies of the effect of bank market structure, the emphasis was more on the individual loan or deposit markets, for example Edwards (1964), Flechsig (1965), Kaufman (1966) and Aspinwall (1970). A useful survey of bank market structure and competition can be found in Glbert (1984).
25. In general, banking markets are not perfectly competitive, but aouthors like Niehans (1978) and Baltensperger (1980) assume that banks are perfectly competitive.
26. For example, the were still questioning whether stock or flow measures were the relevant concepts for bank output and input.
27. The same approach can be found in Orr and Mellon (1961), Poole (1968), Frost (1971), Pringle (1974), Hester and Pierce (1975), Koskela (1976) and Niehans (1978). The models of bank reserve and liquidity management developed by these outhors are originally based on Edgeworth (1888).
28. For example, Flechsig (1964), Kaufman (1966) and Aspinwall (1970), or for more detail see endnote 23.

29. Van Hoose (1985) mentions that the deregulation of banking and verious froms of financial innovations may have also altered the competitive environment in banking, p. 298.
30. These elements produce two different types of risks, i.e, default risk and liquidity risk.
31. Except in Pakistan and Iran.
32. However, the experience of Pakistan and Iran (Ajmed (1989), pp. 164-165) and Malaysia (Naughton and Shanmugam (1990), p. 27) shows that the uses of funds are mainly channelled to the deferred payments.
33. The issue of changing the pre-determined profit-sharing ratio is still controversial. Some scholars believe that it would beinappropriate to change a contractually determined ratio. While some scholars argue in favour of regulating the ratio, provided such actions affect only new deposits and loans, see Khan and Mirakhor (1987b), p. 165.
34. The same argument has also been pointed out by Freedman (1989), Friedman (1989) and Goodhart (1989).

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