

4. BANK CREDIT, ECONOMIC GROWTH

AND STRUCTURAL CHANGE:

THEORIES AND EVIDENCE

The traditional theory of intermediation is based on the concept of economies of scale. According to Gurley and Shaw (1960), financial intermediation can pool risk and diversify portfolios more cheaply than individual investors, given the fixed costs of acquiring investments. On the assets (lending) side, financial intermediaries can manage investments at lower costs than most individual lenders. Owing to the sheer size of its portfolio, it can significantly reduce risks through diversification. It can also minimise the possibilities of liquidity crises by scheduling maturities appropriately. On the (borrowing) liabilities side, they can be seen as providing a form of insurance to risk-averse depositors against liquidity risk.

A disadvantage of intermediated finance is the increase in transaction costs due to the longer chain of transactions between the firm and the final investor. For their argument to hold, the technology for issuing securities must be such that it is less costly for intermediation to do this repackaging (of the primary securities issued by firms into the indirect financial securities desired by final investors) than for investors to hold securities directly. However, transaction costs were not formally modelled by Gurley and Shaw²¹ who do not distinguish banks from other financial intermediaries such as mutual funds, which may also benefit from economies of scale (Davis, 1992: 17).

On the other hand, there are economists who argue that debt financing can be better performed through banks. Recent theories of financial intermediation have focused on the role of banks in information production and transmission (see Leland and Pyle, 1977; Campbell and Kracaw, 1980; Diamond, 1984). As noted, information asymmetries in the

absence of complete contracts²² give rise to a need for lenders to screen the quality of borrowers and to monitor their performance to avoid adverse selection and moral hazard.²³ The argument is that banks may have informational advantages over other outsiders in dealing with information asymmetries. The informational advantages arises from ongoing credit relationships, from access to a borrower's deposit history (Fama, 1985), as well as from the use of transaction services (Lewis, 1991).²⁴ Moreover, banks have a cost advantage because information production and provision of transaction and other intermediary services are complementary activities (James, 1987: 217). The intangible nature of this information makes it difficult to transfer to markets or other lenders. As a result, 'this will avoid the free rider problem typical of securities markets, where an individual investor in marketable securities can costlessly take advantage of information on borrowers produced by other investors, thus reducing the incentive to gather it' (Davis, 1992: 18).

Diamond has developed a theory of financial intermediaries which explains why it may be efficient for investors to delegate monitoring to banks, given information asymmetries between borrowers and lenders.²⁵ The analysis focuses on financial intermediaries, particularly banks which raise funds from many lenders (depositors), promise them a given pattern of returns, lend to entrepreneurs and are delegated the task of monitoring and enforcing loan contracts with entrepreneurs which are less costly than those available without monitoring (Diamond, 1984: 394). Diamond acknowledges that the task delegated to banks may give rise to incentive problems between banks and its depositors. A bank might cheat the depositors by claiming that all entrepreneurs had negligible profits so that it has insufficient loan proceeds to repay to them. His solution to this problem is that the depositors sign incentive contracts with the bank, whereby the bank is obliged to pay a fixed debt claim to depositors. Banks which fail to fulfil this obligation is punished by bankruptcy. A bank,

therefore, must choose contracts such that it has the incentive to monitor information in order to deter borrowers who may default,²⁶ and make sufficient payments to depositors to attract deposits. Providing such incentives is costly,²⁷ but Diamond shows that such costs can be reduced by portfolio diversification by banks.²⁸ This is due to the 'law of large numbers': 'As the number of loans to entrepreneurs with projects whose returns are independent (or independent conditional on observables) grows without bounds, we show that costs of delegation approach zero' (Diamond, 1984: 395). As Diamond (1984: 402) put it: 'The intermediary need not be monitored because it take full responsibility and bears all penalties for any shortfalls of payments to principals. The diversification of its portfolio makes the probability of incurring these penalties very small and allows the information collected by the intermediary to be observed only by the intermediary'. This allows depositors to observe costlessly whether or not the bank has undertaken the necessary amount of monitoring since if it did not, it would not be able to pay the promised rate of return.

Besides monitoring, it is also argued that banks can reduce the problems of moral hazard through control efforts. Managers are controlled directly and indirectly through both explicit and implicit contracts and by both lenders and shareholders. The lenders exert control through both the formal terms of the loan contract²⁹ as well as their refusal to renew a loan. Shareholders exert control through both the voting process as well as their refusal to provide additional capital. Stiglitz (1985: 140) argues that to the extent that control is exercised, it is by banks and not by the owners of equity, despite the legal form that places responsibility for control in the hands of the owners of equity. Banks may exercise control more effectively because the nature of the loan contract enables them to do this without undertaking undue risk; they can focus their attention on information gathering relating to the probability of default and the net worth of the firm in case of low return. There is no tendency for a free

rider problem as in the securities market, where if one shareholder takes action to increase his return, other shareholders who do not contribute will benefit equally, hence reducing the incentive for the active shareholder to acquire information to increase his return (Stiglitz, 1985: 144). The consequence is that the shareholders, who have nominal control, cannot effectively exercise it. Thus, 'given that managers could not be effectively controlled, no one would turn over to them the capital required for the development of modern industry (Stiglitz, 1985: 143)

It is argued that banks are well-placed to develop long-term relations and commitments to firms unlike the securities market (Mayer, 1988; Sharpe, 1990). Hilferding was one of the first economists to discuss the implications of bank credit for the relationship between bankers and industry. He argued that this relationship arises when banks provide long-term credit to finance new plant and machinery, and hence, take a long-term interest in the firm's performance. The importance of long-term finance is also emphasized by Mayer (1988). Mayer's 'commitment in financing' hypothesis argues that banks will take the risk to commit themselves to rescue firms that are in financial difficulties and resist the temptation to withdraw capital only if they anticipate being able to gain the benefits from the expansion of business once the firm has been successfully revived. Competition in financial markets will only cause the future benefits from a successful rescue to be competed away. Thus, the more competitive the financial market, the less likely it is that firms will establish a long-term relationship with a lender. Long-term relationships will not develop in competitive financial markets as there is a problem of time inconsistency. That is, although long-term relationship may be optimal *ex ante*, but the bank or the firm has the incentive to renege *ex post*. For instance:

A firm that is committed to a particular investment project that has not yet reached maturity is in a weak bargaining position when it comes to renegotiating further loans. The bank that takes a current loss in the hope of a future return is reliant on a more advantageous arrangement not being presented to the firm. *Ex ante* the bank would like to commit itself to a loan that specifies the terms of future finance, thereby encouraging the firm to undertake the investment. *Ex post* there will be incentive for the firm to renege on this arrangement. The firm will therefore seek protection in the form of long-term finance. Conversely the company that is currently seeking rescue finance will *ex ante* be willing to commit itself to one bank but *ex post* be tempted by more competitive offers. (Mayer, 1988: 1179)

Thus, competition in financial markets prevents a firm and investors to commit to each other. The time-inconsistency problem results in the conflict between commitment and competition. The absence of commitment and long-term relationships, Mayer argues, forces firms to rely on internal financing for investment projects.

Banks are said to be able to mitigate the time inconsistency problem because they have more information about clients as discussed earlier. Superior information on the part of banks allows them to enjoy an information monopoly over the firms as the information generated in prior relationships with their customers cannot be verified by potential new lenders (Sharpe, 1990: 1069). Since other lenders are not able to distinguish between good risks and bad risks due to information asymmetries, they may charge the good risks higher rates, compared to what their old banks would charge them. Adverse selection makes it difficult for a bank to attract another bank's good customers without attracting the less desirable ones as well (Sharpe, 1990: 1070). Thus, close debtor-creditor ties can reduce the lender's expected cost of providing capital, which may in turn reduce the loan rates. While close debtor-creditor ties reduce the lender's expected costs, it also, increases its information monopoly and, as a result, cost reductions are not passed on to the firms in the form of lower loan rates. Despite some monopoly power which the banks acquire over borrowers in the course of lending,³⁰ they may not in fact, choose to exploit it as Sharpe postulates that competition for new business

encourages banks to maintain a reputation for non-exploitative behaviour: 'In the context of our loan market, if a bank exploits its 'optimal' customers, it is likely to lose market share as potential new customers learn of such practices. Broken agreements in the past would be punished by the loss of future credibility' (Sharpe, 1990: 1080). Thus, reputation of banks is vital as firms will only be willing to commit themselves to creditors if they believe that their creditors will not exploit their position.

For a comparative analysis of the monitoring characteristics of financial systems, Aoki (1994: 111-3) conceptually distinguishes three stages of monitoring. The first stage of monitoring, *ex ante*, refers to the investor's assessment and screening of the credit-worthiness of the investment projects proposed by corporate firms. At this stage of monitoring, the problem of adverse selection associated with transactions involving investible funds between the suppliers of funds and an industrial firm undertaking a business project can be reduced. The second stage, involving *interim* monitoring, refers to an investor checking the ongoing behaviour of management and the operations of the firm in general, and its use of funds in particular, after the funds have been committed. Monitoring at this stage is essential to deal with the moral hazard problem. Without this type of monitoring, managers have an incentive to divert funds in their own interest in order to maximise their own wealth at the expense of the investor. The third kind of monitoring, *ex post*, refers to the verification of the claimed performance outcomes of the firm, judgement of the long run viability of the firm in case of financial distress, and the use of information for possible correction or punitive action. With such credible commitment, the firm's management would be anxious to avoid *ex ante* and interim behaviour that might result in poor firm performance.

Under certain conditions, banks are better able than securities markets to perform these integrated monitoring functions (for details, see Aoki, 1994: 133-35). To summarise the

main points, first, the bank-based financial system is claimed to be more efficient as it economises on the use of scarce monitoring resources through the integration of various monitoring functions. While these monitoring tasks are concentrated in banks in a bank-based system, they are dispersed among various institutions in a securities market system: effective monitoring requires a high degree of specialised expertise usually dispersed among investment banks, rating companies and fund managers.³¹ Developing economies may not need the decentralised specialisation of *ex ante* monitoring as much as advanced economies facing the technological frontier (Aoki, 1994: 133).

Second, in the presence of information asymmetry, firm managers themselves may not necessarily be well informed about the profitability and risk potential of proposed projects as the future returns of a project may also depend on the financing of complementary projects undertaken by other firms.³² This failure to coordinate cross-industrial investment is known as the 'coordination problem'. It is argued that the coordination problem may be resolved by identifying and concentrating investments in leading industries, and for this, a bank-based system may provide a better coordinating framework (Aoki, 1994: 134). The Japanese experience shows how the *ex ante* monitoring capacity of city banks was nurtured at the beginning of the high growth period within a government-industry-bank framework for coordinating investment in strategic industries. As Aoki documents:

Formal investment decisions on the construction of large-scale dams and power plants were coordinated and authorised by the Council of Coordinating Electric Energy Source Development (Dengen Kaihatsu Chosei Shingikai). The Public Utility Bureau of MITI acted as a secretariat for the council. The funding plan for approval investment projects was discussed at the Industrial Funding Division of the Industrial Structure Council and then incorporated into the Japan Development Bank's business plan through the Fiscal and Investment Loan Programme administered by the Trust Bureau of the Ministry of Finance (MOF). Throughout the preparatory processes, information was exchanged among various public authorities, power companies, private and public long-term credit banks and city banks, important users of industries

such as steel and shipbuilding, and academic experts in fields such as economic planning, econometrics and civil engineering . . . Therefore, sharing information of demand and supply conditions of the power industry throughout the planning process provided a useful framework of common expectations regarding medium-term economic projects. The shared expectations provided not only a useful guideline for specific loan decisions (*ex ante* monitoring) for private banks, but also helped to prevent the economy from being trapped in low equilibrium due to a lack of conditions among industries in investment decision. (Aoki, 1994: 116-117)

However, in the real world, where access to information is unequal, markets are inevitably incomplete and complementarities are increasingly abundant, a decentralised securities-based financial system may not be appropriate for such coordination, particularly when information concerning inter-industry complementarities may not be transmitted through the market.

Third, the ownership of firms in developing economies may take various forms including publicly traded joint-stock companies, closely-held limited liability companies, cooperatives and partnership. Since bank intervention only depends only on a firm's output performance, it follows that *expost* monitoring by the bank-based system is more appropriate as it may be compatible with the variety of ownership arrangements in developing countries.

In conclusion, these studies, which apply the economics of information, imply that the more pronounced the information asymmetries, the more preferable banking arrangements will be to direct securities markets. This led Park to conclude that the role of banks is more important in developing countries, where information problems are severe because accounting and auditing systems are typically less reliable than in advanced countries (Park, 1994: 13).