

## Discussion

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It is some time since I have read a survey as thought-provoking and interesting as this one. The basic issue that Hellwig addresses is the role of financial institutions in the allocation of capital for investment. Historically, there are two types of institution that have been important; the first is banks and the second is stock markets.

These institutions have played varying roles in different countries at different times. For example, in Germany and Japan banks have been much more important than in the UK and US where stock markets have played a more significant role. One of the things that I particularly liked about the paper was the use of historical and contemporary evidence for assessing the various theories that have been suggested. Moreover, the theories that are considered are not restricted to those suggested by economists; the hypotheses developed by economic historians are also considered.

Why is it that different countries have such different financial institutions? As Hellwig points out, standard economic theory has little to say on this issue; the Walrasian model simply assumes a set of frictionless institutions. Until recently, the most popular explanation for the role of intermediation was based on transaction costs. Gurley and Shaw (1960) argued that financial intermediaries such as banks transformed the earnings streams generated by firms into a form that investors found desirable. For this argument to hold, the technology for issuing securities must be such that it is less costly for intermediaries to do this repackaging than for investors to hold securities directly. In this view, banks improve the efficiency of the economy relative to stock markets alone since they allow a more efficient allocation of resources.

This argument is intuitively appealing. However, the precise nature of the assumptions necessary for these results to hold is unclear since transaction costs were not formally modelled by Gurley and Shaw. In Allen and Gale (1988, 1989, 1990) the effect of incorporating the transaction costs of issuing securities is considered. Banks are not explicitly analysed. However, the results indicate that, in general, the institutions generated by the 'invisible hand' in the presence of transaction costs are not an efficient set of institutions. For example, in Allen and Gale (1990) it is shown that options markets may arise even though everybody could be better off if they did not exist. Also, the financial institutions that do

arise when transaction costs are incorporated depend on the precise form of the legal system and the property rights that exist. In this view, one possible explanation for the differences in the role of banks and stock markets in different countries is due to the different legal systems in place.

The second type of explanation for intermediation which Hellwig considers is based on asymmetric information. Diamond (1984) has suggested that banks act as delegated monitors. In his model, it is inefficient for many small shareholders each to incur the cost of monitoring a firm's management. Instead, a single bank can monitor so that the cost is incurred only once. The problem faced by investors is 'Who monitors the monitor?' or in other words how do the investors ensure that the bank actually does the monitoring? In Diamond's model, there are a large number of firms with independent payoff risks. If the intermediary invests in a very large number of firms the risk is diversified away. This allows investors 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.

As Hellwig points out, there are a number of problems with Diamond's analysis. At a theoretical level, his model contains a number of special assumptions and it is not clear how robust the results are to changes in these assumptions. At an empirical level, firms tend to have relationships with many banks simultaneously. Also it appears that banks are unable to diversify away all risk; but if a bank has risky investments there remains the problem of monitoring the monitor.

As mentioned above, the starting point of Diamond's analysis is the observation that in a stock market it would be very costly for many small investors each to incur the cost of acquiring information about a firm. In actual stock markets there appears to be another mechanism for overcoming this problem, namely a market for information. Investors do not gather information themselves but purchase it either directly or indirectly. The counterpart to 'monitoring the monitor' is ensuring that sellers of information do actually have superior information. Bhattacharya and Pfleiderer (1985) and Allen (1990) have considered this problem and show that under certain circumstances information can be gathered by a single party and sold to many investors so that the cost is shared. The analysis of the market for information is still at a very early stage. It is still unclear under what circumstances, if any, incorporating it into the analysis of stock markets leads to a superior allocation of resources compared to banks.

The third type of explanation for intermediation that Hellwig considers is that it is a mechanism of commitment to a long-term relationship as suggested by Mayer (1988) and Fischer (1990). This view stresses the

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66 Discussion by Franklin Allen

difficulties lenders may have in ensuring that a firm fulfills its commitments when it borrows money. For example, if a firm has problems and requires a loan the lender may require a high interest rate to compensate it for the risk of the loan. However, once the firm is out of difficulty it has an incentive to obtain alternative financing at a lower cost. By forming a long-term relationship where the bank acquires better information about the firm than other lenders, it may be possible to mitigate this type of problem more easily than when a firm issues securities to many investors.

Hellwig's paper contains an excellent summary and critique of the literature on why banks exist and their role in the allocation of resources. It does not spend much time on the advantages of stock markets. One point that is made is that *ceteris paribus* intermediation will be more costly since it involves a chain of transactions. Also the theory of Diamond (1989) is mentioned. He suggests that the top segment of large and profitable firms will be able to finance directly in security markets because of their previous track records.

Other theories explaining the coexistence of stock markets and banks, which are not mentioned are Gorton and Haubrich (1987) and Seward (1990). Gorton and Haubrich's model is an extension of that in Diamond (1984). Firms precommit to an optimal level of monitoring by taking on an appropriate level of bank debt. This allows them to obtain the highest possible price for the securities they issue in the stock market. In Seward's model there are two types of asymmetric information. The providers of finance cannot observe the investment allocations of firms and can only partially observe cash flows. Seward shows that a firm can mitigate the problems created by these two types of asymmetric information by simultaneously issuing debt in the securities markets and taking on bank loans.

In varying degrees, these theories share the characteristic that stock markets appear to be of secondary importance. This view appears to be in sharp contrast to the apparently widely held belief in the UK and US that the stock market plays a vital role in the operation of the economy. Mayer (1988) has presented evidence that in terms of raising actual funds stock markets are fairly unimportant. What then is the role that they play?

Manne (1965) has argued that the control of corporations may constitute a valuable asset. In this view different individuals or management teams can operate firms with different degrees of profitability. The important issue in this case is for there to be mechanisms which allow control to be acquired by those most able to exercise it. In countries such as Germany, where the predominant financial institutions are banks, the amount of information that is publicly available about firms is very small. In this type of situation it is very difficult for able individuals and management teams to discover firms which they could control better than

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the incumbent management. However, it can be argued that in economies with active stock markets such as the UK and US there is a great deal more publicly available information about firms and this makes it significantly easier for control to flow to the individuals and management teams that are best able to exercise it. Thus, even when stock markets are unimportant in terms of raising new funds, they may nevertheless be important in terms of ensuring an efficient allocation of the control of capital.

One of the problems with this argument is that it relies on superior managers being able to acquire control of firms with inferior management. The problems of takeovers as a mechanism for acquiring control have been widely analysed (see Stiglitz, 1985, for a discussion). For example, Grossman and Hart (1980) have identified a free-rider problem. Acting individually each small shareholder has an incentive to hang on to their shares in the face of a takeover which will increase the value of the firm since they will then be able to share in the increased post-takeover value. This means that value-enhancing takeovers will not succeed unless they pay the full post-takeover value. The takeover therefore cannot be profitable and if there are any costs to mounting it will be unprofitable. Grossman and Hart argue that this free-rider problem can be overcome to some extent if the new owners can dilute the value of the firm by, for example, transferring assets to themselves. This type of dilution may be desirable if it increases the probability of a takeover which allows the firm assets to be better managed. Even though the takeover mechanism has various imperfections, a stock market may nevertheless lead to a better allocation of control rights than a financial system where banks predominate.

In conclusion, our understanding of the role of financial institutions is still very incomplete. There are a number of theories which suggest that financial systems where banks predominate may be superior to financial systems where stock markets are important. There are also theories which suggest the reverse. However, these theories are not yet able to convincingly explain why, for example, banks played such an important role in Germany and Japan while stock markets have been more important in the UK and US. Much more work is required before we have a reasonable understanding of these important issues. Hellwig's survey is a good starting point for anybody wishing to pursue research in this area.

#### NOTE

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## MARGARET BRAY

This paper addresses a large and important question; what effect does the institutional form of the financial system have on the allocation of funds

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