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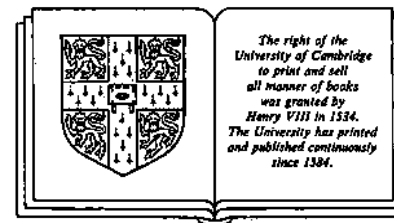
European financial integration

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institutions must be reduced in an orderly manner. Vives argues convincingly that mergers are likely to prevail in banking markets, because of the fear that price wars and predatory pricing could hurt solvency reputation, and possibly lead to bank runs. The wave of bank mergers currently observed in several European countries seem to confirm this prediction.

3 Banking, financial intermediation and corporate finance

MARTIN HELLWIG

1 Introduction

What is the role of banks and other intermediaries in the provision of finance to industry? More generally, how do financial institutions affect the allocation of funds for investment and the evolution of production possibilities in an economy?

Until very recently, questions of this type received little attention from economic theory. Theoretical work on finance tended to rely rather heavily on the Walrasian paradigm of 'perfect', i.e. anonymous, frictionless markets. Within this paradigm, there is no room for a comparative analysis of different institutions because one specific set of institutions, namely the Walrasian market system, is *a priori* taken as given. Reliance on the Walrasian paradigm with its given set of frictionless markets involves an implicit presumption that comparative institutional analysis can be neglected – say because as a first approximation all potentially interesting institutions achieve roughly the same outcome as a Walrasian market system.

In contrast, the role of institutions in the provision of finance to industry is of great interest to economic historians and development economists. Historians observe that financial systems differ significantly across countries and across periods, so the question arises how these differences between financial systems affected the functioning of the different economies. In certain countries such as Germany, large banks seem to have played a prominent role in the industrial expansion of the late nineteenth century. In other countries such as Britain, banks do not seem to have played such a role. Did the prominence of the large banks in Germany make a positive contribution to economic growth? Does the difference between financial systems explain some of the difference between Germany and British growth rates in the late nineteenth century?¹

The historical literature presents a challenge to economic theory. Here as

elsewhere, we need a theoretical framework to move from the observation of the simplest correlations to an assessment of the underlying mechanisms. To evaluate the effects of the large German banks on growth in the late nineteenth century, one has to travel rather far into the world of counterfactuals. Not only does one have to sort out the respective roles of the supply of funds by the financial system and the demand for funds by industry (Tilly, 1966, p. 138; Landes, 1969, pp. 352ff), but in addition one has to consider what alternatives to bank finance there might have been, i.e. one has to assess the actual system in comparison to some counterfactual alternatives. Explicitly or implicitly, the specification of counterfactual alternatives involves a theoretical assessment of how different institutions work. The question then is what theoretical framework do we have for making such assessments?

These issues are not just of historical interest. Some of the distinctions between bank-oriented and market-oriented systems are still relevant today. Japan in the post-war period provides at least as striking an example of bank prominence in industrial finance as Germany in the late nineteenth century. The historians' discussion of Germany and Britain in the late nineteenth century can be recast in terms of Japan and the United States in the post-war period. Does the difference in financial systems explain any part of the difference between Japanese and US growth rates since the Second World War?

As pointed out above, the Walrasian paradigm of 'perfect' markets is not appropriate for addressing such questions. To be sure, the early work on financial intermediation by Gurley and Shaw (1960) Brainard and Tobin (1961) or Tobin (1969), does fit financial intermediaries into a Walrasian framework. In this literature, however, it is not clear what relation there is between the Walrasian formalism and the rather non-Walrasian informal accounts of why intermediation matters. In the Walrasian formalism, all agents – consumers, producers and intermediaries – appear as anonymous participants in the different markets; transactions costs, indivisibilities and the organization of markets by intermediaries are left outside the formalism. In consequence, the analysis provides some partial-equilibrium insights about the effects of tax and regulatory changes on financial intermediation, but it allows no explicit general equilibrium or welfare comparison of different financial systems.

The challenge to economic theory has recently been taken up again in a thought-provoking paper by Mayer (1988). Like some of the economic historians, but drawing on recent data for the period 1970–85, Mayer suggests that there are systematic differences in performance between financial systems in which banks play a prominent role and financial systems in which banks are not so prominent. He proposes to explain

these differences in performance by differences in mechanisms that reduce or eliminate moral hazard in the relation between entrepreneurs and financiers. Specifically, he suggests that the more bank-oriented systems of Germany and Japan involve more commitment of the firm and the bank to a long-term relation, which allows them to enjoy the benefits of long-term contracting to reduce moral hazard.

The importance of moral hazard for finance had previously been stressed by Jensen and Meckling (1976). They had suggested that financial contracts and financial institutions are most usefully explained as efficient mechanisms for dealing with moral hazard. Mayer follows this research program, but he modifies it in an important respect. Whereas Jensen and Meckling had looked at optimal contracts for dealing with one-time moral hazard problems, Mayer is concerned about *repeated moral hazard problems in ongoing long-term relations*. The focus of the analysis is thus shifted from short-term incentive effects to problems of *commitment, contract incompleteness and sequential rationality* in long-term relations. According to Mayer, the nature of long-term relations determines the availability of long-term finance to firms; moreover it is this availability of long-term finance, that makes the difference between different financial systems.

Mayer does not actually work out his ideas in the context of a fully specified model, so perhaps his paper should be read as an agenda for research rather than the final theory. In the following survey, I will try to assess where we are in this research. Specifically, I want to consider the following issues:

Where are we in our understanding of the internal logic of long-term bank-firm relations? More generally, in what sense is ability to support long-term relations the clue to assessing financial institutions?

What does the consideration of long-term financial relations add to our understanding of financial institutions? Where do we go beyond the insights contained in the work of economic historians or the static analysis of Jensen and Meckling (1976) and Diamond (1984)? More generally, where are we in the search for a theoretical framework that enables us to assess the role of banks and other intermediaries in the provision of finance to industry?

How does our theoretical analysis relate to the stylized facts presented by the economic historians as well as by Mayer and others?

What clues do we have that theory is in fact telling us the right story?

The focus of my discussion will be on *financial institutions rather than financial instruments*. In contrast to the standard textbook on corporate

finance, I am not so much concerned with the types of securities that firms issue or with the return patterns on such securities. I am rather concerned with the institutional environment in which securities are issued and finance is obtained. To be sure, we sometimes associate banks with fixed-interest debt and organized markets with equity. However, such an association of different institutions with different financial instruments does not go to the heart of the matter. In certain countries where stock markets are organized and dominated by banks, a stock issue will be just as dependent on the firm's bank as a bank loan. Recent developments in Japan provide us with an example where organized *bond* markets serve to emancipate firms from the dominance of their 'main banks' (Hoshi *et al.*, 1989b). Thus I see the distinction between bank finance and market finance as largely independent of the distinction between debt finance and equity finance. My concern here is to assess the economic significance of the distinction between the different institutional environments for corporate finance.

2 Inside finance, outside finance and bank finance: theoretical presumptions in historical assessments

It will be convenient to begin the analysis with the debate among historians about the role of banks in the process of industrialization. This debate has focussed on the work of Gerschenkron (1962), which interprets bank prominence in industrial finance as a consequence of economic backwardness. According to Gerschenkron, countries like Germany or Italy in the late nineteenth century suffered from a scarcity of capital as well as entrepreneurship, so bank finance and bank initiative had to step in as a substitute. In this interpretation, capital is regarded as scarce because: (i) at this late stage, a hundred years after the beginning of the industrial revolution, the adoption of up-to-date technology required large capital outlays, and (ii) the failure to participate in the earlier stages of industrialization meant a lack of accumulated funds that could be used to finance these outlays. In contrast, Britain started industrialization at a time when required capital outlays were small. When subsequently the required long-term capital increased, accumulated funds from the earlier stages were available so that recourse to bank finance on the German pattern was unnecessary.

In passing, I note that Gerschenkron's assessment of the data has not remained undisputed. In contrast to Gerschenkron, Neuburger and Stokes (1974) suggest that, in the German case, the observed prominence of bank finance for heavy industry with large capital requirements may be a consequence of biased bank preferences rather than the requirements

of industrialization with up-to-date technologies. Indeed, they suggest that the bias in bank behaviour may have induced inefficiencies that retarded growth. Tilly and Fremdling (1976) and Tilly (1986) dispute the finding of inefficiency, but confirm the existence of a specific preference among banks for firms and industries with large-scale capital requirements, among them of course the heavy industries.

This is not the place to pursue these empirical questions. Instead, I want to analyse the theoretical structure of Gerschenkron's argument. This will provide a useful starting point for the subsequent assessment of where we are in our theoretical analysis of financial intermediation and corporate finance.

Consider first the notion of 'capital scarcity'. We must distinguish between capital scarcity at the level of the individual firm and capital scarcity at the level of the economy as a whole. Gerschenkron's argument about the role of banks in German industrial development involves the notion of *capital scarcity at the level of the individual firm*: at the level of the firm, retained earnings were insufficient to finance desired investments. To be sure, differences in interest rates and international capital flows suggest that at the aggregate level, too, capital was relatively more scarce in Germany than Britain. However, the argument about the specific role of bank finance in a situation of 'backwardness' turns on the notion of capital scarcity at the firm level. At the aggregate level, capital was available and only needed to be mobilized to finance large-scale investment. Such mobilization of outside finance in a situation where inside finance is insufficient is precisely the function of banks in Gerschenkron's argument.²

At this point, Gerschenkron's argument raises two questions.

- (i) Why should an insufficiency of inside finance be seen as characteristic for a situation of 'economic backwardness'?
- (ii) Why should the large-scale provision of outside finance to industry require the intervention of banks or of the government?

The first question really concerns the role of inside finance in an industrially advanced country. It is clear that, in the second half of the nineteenth century, certain advanced technologies required large-scale investments. It is also clear that firms in the more 'backward' countries had not had the time to accumulate the funds required for such investments. However, it is not so clear why firms in the industrially more advanced country should have retained earnings to such an extent that further industrialization could be financed without much recourse to outside finance. To be sure, this was the pattern observed in Britain. But can one generalize from the British experience?

In this context, I note a curious contrast between Gerschenkron's analysis and Mayer's assessment of essentially the same empirical phenomenon in different data. In Mayer's (1988) assessment of cross-country differences in financing patterns in the period 1970–85, the ability of the bank-oriented systems of Japan and Germany to provide outside finance to industry is regarded as a major advantage of these systems over the market-oriented systems of the US and the UK, in which industrial investment is limited by the firms' ability to self-finance. Where Gerschenkron interprets industry reliance on banks for outside finance as a sign of 'economic backwardness', Mayer interprets the relative insignificance of outside finance in the US and the UK as a structural weakness of the market-oriented financial systems in these countries.

From the perspective of the Modigliani-Miller theorem, it is not clear that either assessment is warranted – at least without additional arguments. In a Modigliani-Miller world, the ratio of outside finance to inside finance is irrelevant. For consider two firms with identical investment paths and identical paths of earnings before interest, and suppose that one firm is levered whereas the other firm is wholly equity-financed. The firm that is equity-financed is free to choose between distributions and retentions so as to have a high level of self-finance. The levered firm must have distributions at least equal to its interest obligations, so it has less scope for self-finance. In this case, outside finance just compensates for the fact that the levered firm has to pay interest. But there is no difference in real investment paths. Any attempt to attach substantive significance to the ratio of outside finance to inside finance must therefore be based on additional arguments that move us out of a Modigliani-Miller world.

In Gerschenkron's analysis, the additional argument comes from the implicit hypothesis that firms have a strict preference for inside finance over the different types of outside finance. Under this hypothesis, self-finance is the 'normal' source of funds in an advanced economy, and 'backwardness' is on stage where the 'normal' situation of almost exclusive reliance on inside finance has not yet been reached. Empirically, this interpretation receives some support from the observation that the larger companies in pre-First World War Germany did try to move towards self-finance as soon as they possibly could, and that the banks' ascendancy was reduced apace. (Similar developments are reported by Hoshi *et al.*, 1989a, b and by Fischer, 1990 for present-day Japan and Germany.)

From a theoretical point of view, the question is why a high degree of self-finance should be regarded as 'normal'. What are the mechanisms that make inside finance so much more desirable to firms than outside finance? Moreover what are the consequences of self-finance for the

economy as a whole? Is it clear that a heavy reliance on inside finance is socially desirable? In the last part of this paper, I shall try to give at least a preliminary account of where we are on these questions.

I now turn to the role of banks in Gerschenkron's analysis. In his interpretation, the involvement of banks or the government is needed to provide outside finance to industry on any large scale. Outside finance from the anonymous, organized markets of our theoretical models is not seen as an alternative.

Bank finance here is not necessarily just loan finance. During certain periods, especially prior to 1873, German companies obtained substantial amounts of equity finance. However, the shares would be held by banks or by clients or banks acting on the banks' advice, so in many respects, banks were as much involved in equity finance as in loan finance. While share markets were organized, they were certainly not anonymous and free for all as the theoretical models would have it.

The question is to what extent bank involvement in equity and loan finance was actually necessary. The mere observation of bank prominence does not imply that there could not have been a substitute. Perhaps the banks were no more than institutionalized Walrasian auctioneers, without significance for the real allocation – and if they had not done the job, somebody else would have done it! While I do not actually believe that this was the case, we need an additional argument to show why bank finance was important. The Gerschenkron argument means that bank finance could do something that anonymous, organized markets could not have done. So we need to discuss what exactly the comparative advantage of bank finance is. This is the subject of the following sections.

To conclude this section – and before I turn to an explicit comparison of bank finance and market finance – I want to point to another puzzle. If we do find an important comparative advantage of bank finance over direct finance through anonymous markets, why do anonymous, organized markets seem to play such a significant role in the UK and the US? Does the comparative efficiency of bank finance and market finance vary from country to country? Or could it be the case that the efficiency of capital markets in the UK and the US serves investors who want to reshuffle their portfolios, but is of little relevance to firms that want to raise outside finance? Mayer's observations on the contribution of UK and US stock markets to industry funding suggest that the latter might indeed be the case. So do observations about the well-known underpricing phenomenon for initial public offerings, which is just as prominent in the US as it is in Germany or Switzerland (see, e.g. Ibbotson *et al.*, 1988). There is an empirical issue here that needs to be settled before we can usefully proceed with any theoretical assessment. However, it is of some interest to

note that, on the question of bank finance versus market finance, Gerschenkron's analysis implicitly parallels Mayer's more recent questioning of the role of anonymous, organized markets for the funding of industry.

3 What do intermediaries do? Risk diversification versus agency cost reduction

Before considering the advantages of intermediated finance over direct finance through anonymous, organized markets, it is useful to observe that, in principle, intermediated finance has one disadvantage: the chain of transactions between the firm and the final investor is longer, and *ceteris paribus*, an increase in the length of the chain of transactions may be taken to entail an increase in transactions costs. Any proposition that intermediated finance is more advantageous than direct finance must therefore be based on a view that the presumed gains from intermediation are more than enough to compensate for the increased transactions costs.

The literature gives two quite distinct accounts of the role of intermediation. In the early analysis of Gurley and Shaw (1960), financial intermediaries are there to transform the primary securities issued by firms into the indirect financial securities desired by final investors. Firms issue shares and bonds, final investors desire demand deposits or life insurance policies, and the missing link is provided by intermediaries that issue demand deposits or life insurance policies and that hold shares and bonds. Intermediation is seen as a kind of transportation: just as the transporter takes oranges in Spain and transforms them into oranges in Germany, so the intermediary takes bonds issued by firms and transforms them into demand deposits or savings deposits held by consumers. As mentioned in the introduction, this vision of financial intermediation as a kind of transportation activity is then analysed in a Walrasian model of 'perfect' markets, to which in principle everybody has access on an equal footing.

Why are intermediaries actually needed in the Gurley-Shaw analysis? Why don't firms issue demand deposits or life insurance policies, and why don't final investors hold shares and bonds? *Prima facie*, the answer seems to be that direct finance doesn't permit enough diversification of risks. A small industrial company that finances itself by issuing demand deposits to a thousand consumers may find that the risks of withdrawal are too large. However, the argument does not explain why IBM should not finance itself by issuing demand deposits or life insurance policies. Nor does it explain why the small industrial company should not finance itself by issuing very small demand deposits to a million consumers. Similarly, it may be true that the consumer who holds a life insurance policy issued

by IBM is subject to too much firm-specific risk. But then he could diversify this risk if he held a portfolio of life insurance policies issued by a whole set of different companies.

On the side of firms as of consumers, these objections assume that assets are perfectly divisible and that transactions technologies do not involve any scale economies. At a deeper level, we may therefore say that, in the analysis of Gurley and Shaw, financial intermediation is useful because indivisibilities and non-convexities in transactions technologies restrict the amount of diversification and risk sharing that is feasible under direct finance. In the absence of indivisibilities and non-convexities in transactions technologies, a complete system of Arrow-Debreu markets would achieve an efficient risk allocation anyway (see, e.g. Malinvaud, 1972), and there would be no need for intermediation à la Gurley and Shaw. From this perspective, the function of intermediation in the framework of Gurley and Shaw may be seen as overcoming the frictions from transactions costs so as to bring the economy closer to the efficient-markets world of our theory.

Where does this view of financial intermediation leave us with respect to the Gerschenkron thesis? One empirical implication of the Gurley-Shaw analysis is that, as the economy grows and additional independent risks are added, there should be more scope for financial intermediation to exploit the additional benefits of diversification and risk sharing. From this perspective, economic development should be accompanied by a process of *financial deepening*, i.e. financial intermediation should become more important as the economy advances.

I find it hard to reconcile this proposition with Gerschenkron's interpretation of bank prominence in industry finance as a sign of economic backwardness. The problem is a theoretical one. Empirically, both the Gerschenkron and the Gurley-Shaw propositions about the role of intermediaries at different stages of development may be valid, but then they must be referring to different things, i.e. we cannot use the Gurley-Shaw analysis to account for the role of bank finance in the Gerschenkron argument.

The distinction made here is relevant for any assessment of current developments in international financial markets. The innovations that we have seen in recent years and that have generated so much excitement are perhaps an instance of the type of financial deepening that the Gurley-Shaw analysis predicts. Indeed most political evaluations of this process have – explicitly or implicitly – proceeded on the basis of the Gurley-Shaw approach. The innovations are seen as improving the overall efficiency of the markets and bringing them closer to the Arrow-Debreu ideal. However, to the extent that something else is going on in relations

between industry and the financial sector, it would be desirable to take account of that as well and to consider more explicitly the effects of financial-market innovations on industry finance.

The second approach to financial intermediation that we find in the literature views intermediaries as institutions that reduce or eliminate problems of moral hazard or asymmetric information in relation between firms and financiers. Financiers typically have less information about firms than entrepreneurs or managers. Moreover, they are subject to various types of moral hazard: moral hazard concerning managerial effort, moral hazard concerning the riskiness of the firms' strategies and moral hazard concerning reported return realizations *ex post*. These problems of moral hazard and asymmetric information cause difficulties for the provision of finance to industry (Jensen and Meckling, 1976). Intermediaries are taken to reduce these difficulties by engaging in monitoring and control activities.

Diamond (1984) presents an explicit example in which intermediation successfully reduces the agency costs of outside finance under moral hazard. In his analysis, the feasibility of financial intermediation rests on two key propositions:

- (i) Monitoring and control of a firm involve natural scale economies: a single intermediary can monitor and control the firm at least as effectively as ten thousand shareholders – but much more cheaply.
- (ii) If the intermediary has a well-diversified portfolio of firms that he finances, then relations between himself and his own financiers – the final investors – are not much affected by moral hazard and asymmetric information because his own return is approximately riskless, so for him, fixed-interest debt finance is feasible and does not involve any moral hazard.

On the basis of these two propositions, Diamond shows that under certain circumstances incentive-efficient allocations in a system with intermediation actually dominate incentive-efficient allocations without intermediation.

Unfortunately, we know very little about the functioning of intermediation under conditions of imperfect information. Yanelle's game-theoretic analysis of Diamond's example (1989a, b) shows that at this point we do not know what system would actually implement an incentive-efficient allocation with intermediation. Both the scale economies in intermediation and the non-Walrasian character of simultaneous Bertrand competition on deposit as well as on loan markets destroy the usual presumption that competition entails efficiency. At this point, it is not clear whether these results are a pathological consequence of the extreme

features of Bertrand competition or whether they point to a deeper difficulty with competition among intermediaries in a non-Walrasian setting. What is clear is that we do not have a good understanding of the strategic interaction between intermediaries under imperfect information. (This may be a problem for the theoretical purist rather than the practitioner who would not expect to observe unfettered competition in banking anyway.)

In spite of this lacuna in our understanding, it seems safe to say that the imperfect-information approach captures an important aspect of the role of intermediation for corporate finance. Diamond's notion of financial intermediation as delegated monitoring (or delegated control) does seem to be closely related to Gerschenkron's account of bank involvement in firms at the early stage of industrial development. As emphasized by Mayer, bank initiative and bank participation in entrepreneurial planning may be a way to obtain enough information and control to reduce the moral and informational hazards of finance to a tolerable level. We may therefore look at the imperfect-information approach to financial intermediation as the theoretical basis for Gerschenkron's view that banks and bank involvement with firms were needed to provide outside finance during the early stages of industrialization in Germany when capital was 'scarce and diffuse' and 'the distrust of industrial activities . . . considerable'. In Diamond's terminology, Gerschenkron's presumption must have been that the sum of the monitoring costs of the banks and direct agency costs of bank deposits was less than the agency costs of direct finance, perhaps even that the agency costs of direct finance were so high that this was never a genuine alternative at all.

The difference between the Gurley-Shaw and the Jensen-Meckling-Diamond approaches to financial intermediation is seen rather clearly if we consider the recent trend towards a securitization of loans. From the perspective of the Gurley-Shaw approach, securitization is an instance of financial deepening allowing improved risk sharing: the risks associated with a given loan do not remain with the initial bank, but are divided up and shared among many security holders. From the perspective of the Jensen-Meckling-Diamond approach, the question would be how securitization affects incentives: if the initial bank expects to resell the debt securities to other institutions, how careful will it be in its initial assessment of creditworthiness? Also, how will securitization affect the security holders' willingness to take action when difficulties arise? From this perspective, some of the enthusiasm for securitization should perhaps be tempered by a rather more careful consideration of liabilities and incentives under the different regimes.

4 Financial intermediation as delegated monitoring

I now consider the imperfect-information approach to financial intermediation in more detail. What do intermediaries actually do to reduce information and incentive problems? Why are there scale economies in these activities? How does intermediation affect the firms' investment behaviour?

The literature contains two distinct answers to these questions. According to Diamond (1984, 1989), financial intermediaries reduce information and incentive problems by *monitoring* the firms that they finance. According to Mayer (1988), financial intermediation provides a mechanism of *commitment to a long-term relationship*. I shall consider both approaches in turn.

'Monitoring' ought to be understood in a broad sense as any form of collecting information about a firm, its investment prospects and its behaviour. The information that is collected is useful because it serves to sort out 'bad' projects and/or to punish 'bad' behaviour. The literature contains the following examples:

Monitoring of the firm's return realizations makes it possible to conclude contracts in which the financiers' claims depend on the firm's returns (Diamond, 1984; Gale and Hellwig, 1985).

Monitoring of the firm's characteristics, i.e. a creditworthiness test, makes it possible to avoid bad loans (Broecker, 1990).

Monitoring of the firm's behaviour during the loan application stage makes it possible to avoid loans to firms following too risky an investment strategy (Diamond, 1989).

In all these examples, the role of monitoring is straightforward. The main distinction is between monitoring that takes place before a contract is agreed to and monitoring in the execution of a contract. The former serves to reduce the proportion of bad loans, the latter serves to improve performance under the given contract.

Monitoring that takes place before a contract is written may give rise to some interesting problem of competition on the market for contracts. If the different intermediaries can observe the outcomes of the other intermediaries' monitoring activities, there may be a *free-rider problem* in that each intermediary may want to rely on the other intermediaries' monitoring without doing any monitoring of its own. Alternatively, if the different intermediaries cannot observe the outcomes of the other intermediaries' monitoring activities, there may be a *winner's curse problem* in that each intermediary must fear that his clients were just the ones that his competitors rejected as bad credit risks. Broecker (1990) shows that the winner's curse problem causes difficulties for competition among

monitoring banks, suggesting that perhaps there might be an element of natural monopoly in such a market. These difficulties are not present when monitoring only takes place *after* a contract has been concluded.

In work currently in progress at the University of Basel, von Thadden (1990) studies an example of monitoring within a contractual relation that is particularly interesting because it substantiates Mayer's (1988) suggestion that financial intermediation may lengthen the investment horizon of firms. He considers a model with two investment periods. There are two types of firms, 'good' and 'bad'. Firms can choose between two investment strategies, short-term and long-term. Both strategies require identical amounts of funds in both investment periods. However, the long-term strategy has a relatively low expected payoff in the first investment period and a relatively high expected payoff in the second investment period. Model parameters are specified in such a way that 'bad' firms should not receive funds in either period. However, *ex ante* there is no way for financiers to distinguish 'bad' firms and 'good' firms. After the first investment period, a partial distinction may be possible because there are two sources of information: costless observation of first-period returns and costly monitoring. In the absence of monitoring, banks interpret low first-period return realizations as an indication of poor quality and discontinue financing. Anticipation of such behaviour induces firms to opt for the short-term investment strategy even though the long-term strategy may eventually be more profitable.³

In contrast, monitoring may provide the financier with an additional source of information about firm quality, so he can provide the 'good' firm with some assurance that the second period will be funded even if first-period returns are unfavourable. The 'good' firm is thus induced to pay less attention to the problem of second-period finance and more attention to the overall profitability of the two investment strategies. If indeed the overall profitability of the long-term strategy is higher, then monitoring may have a positive return because the prospect of monitoring and of a better decision on second-period finance induces firms to choose the better investment strategy in the first period.

The preceding considerations explain the gains from monitoring as well as the link between monitoring and the investment horizon in von Thadden's model. They do not yet explain the link between monitoring and financial intermediation. Nor do they take account of the costs of monitoring and intermediation. On these points, von Thadden simply follows Diamond (1984), namely he assumes:

Monitoring involves scale economies, i.e. it is more efficient to have just one financier monitor the firm than many.

In the absence of intermediation, no one financier has enough funds

to finance a single firm, i.e. intermediation is required to exploit the scale economies in monitoring.

The gains from monitoring exceed the – technically given – costs.

The agency costs of finance for an intermediary can be arbitrarily small, say because the intermediary finances many firms and – through the law of large numbers – has an approximately riskless return from these firms which makes fixed-interest debt finance feasible.

With these assumptions, *any* model of monitoring can be turned into a model of financial intermediation as delegated monitoring, at least if one neglects Yanelle's observation that the relative efficiency of intermediation under the given incentive and information constraints may not be sufficient to ensure the emergence of intermediation in an equilibrium of a given game-theoretic model of competitive financial markets. By this procedure, the analysis of financial intermediation is very much simplified because attention is almost exclusively focussed on the monitoring role of financial intermediation. (Note that Diamond, 1989, doesn't even address the refinancing of the intermediaries any more.)

However, there is a certain danger in relying too mechanically on Diamond's procedure for turning models of monitoring into models of financial intermediation as delegated monitoring. By neglecting the refinancing side of intermediation, we may be losing sight of some important phenomena. In a model like von Thadden's for instance, one might use refinancing considerations to explain not only why some banking systems do contribute to long-term investment, but also why others do not. Clearly, the use of monitoring to provide assurance of long-term funding presumes that the financier himself has some assurance that when the time comes he will have the funds available. In this context, it is of interest to note that Germany private banks in the late nineteenth century apparently could be more assured than their English counterparts that short-term liquidity would not be a problem. According to Tilly (1986, 1989), they enjoyed two advantages:

They served a carefully selected group of clients whose payment needs they closely monitored so that they became rather predictable.

They could rely on the discount facility of the Reichsbank to provide for their short-term liquidity needs (albeit at a price). In this respect, the Reichsbank had much more flexibility than the Bank of England, which was tightly constrained under the Bank Charter Act of 1844.

Tilly suggests that these institutional differences were actually responsible for the difference in the commitment horizons of banks in the two countries.

In the same context, one must question the relevance of Diamond's (1984) notion that intermediaries can finance themselves with hardly any agency costs because diversification makes their own portfolios almost riskless.⁴ The portfolios held by German banks in the late nineteenth century seem to have been quite risky. According to Tilly (1986), these banks used their information advantages and their freedom from liquidity worries to engage in investment strategies that involved high risks as well as high returns. Indeed quite a few of the banks went under, so the risks did affect the banks' depositors as well. Given this observation, the analysis of banking and financial intermediation must go beyond Diamond and study again the relation between banks and their depositors under conditions that involve a non-negligible probability of bank failure.

Another possible objection to the notion of financial intermediation as delegated monitoring is rather less well founded. Upon reading Gerschenkron's or Mayer's accounts of the involvement of German and Japanese banks in company planning and decision-making, one may feel that these activities reflect more than just 'monitoring'. The word 'monitoring' seems ill-suited for describing the banks' influence on firm behaviour. Thus, when Gerschenkron emphasizes the role played by banks in the cartelization of German industry in the late nineteenth century, one doesn't exactly think of this activity as 'monitoring'.

However, we should not be deceived by the rhetoric of the word 'monitoring'. The real question is how 'monitoring' fits into the overall relationship between the intermediary and the firm. 'Monitoring' as a form of collecting information about the firm is useful only because the information that is collected has consequences for behaviour and resource allocation within the relationship. The notion of financial intermediation as delegated monitoring must encompass such uses of information as well as the act of collecting the information.

At this point, it is useful to recall that many incentive problems are due to information problems. Certain aspects of relevant behaviour are not commonly observable, hence they cannot effectively be made the subject of a binding agreement, but have to be influenced directly, through appropriate incentives. If all relevant aspects of behaviour could be commonly observed, or inferred from other variables that are commonly observed, then moral hazard would not be much of a problem. In this case, contractual agreements about behaviour – effort choices, risk choices, etc. – could be enforced because contract violations would be detected and could be punished.

Thus from the perspective of incentive theory, 'monitoring' is not so much a sorting device as an instrument for improving performance under an incentive contract. Perfect monitoring of all relevant behaviour will

eliminate the moral-hazard problems altogether and permit the attainment of a first-best solution. Imperfect monitoring, e.g. monitoring that is subject to error, will not eliminate the moral-hazard problems, but at least it will reduce them. From the theory of optimal incentive contracts, we know that even noisy monitoring will improve performance under an optimal incentive contract (see, e.g. Grossman and Hart, 1983). Upon combining this result with the procedure of Diamond that was outlined above we obtain a new version of financial intermediation as delegated monitoring, one that emphasizes the incentive effects rather than the sorting effects of monitoring.

Monitoring as an element in an incentive-contract relation is not all that far from the accounts of Gerschenkron and Mayer. Consider Gerschenkron's observation that banks played a key role in the cartelization of German industry. Any cartel is subject to the moral-hazard problem that the individual firm has an incentive to undercut and to serve more than its allotted share of the market. Banks that are involved with several firms in the same industry have an incentive to restrain such behaviour in order to increase the aggregate gross return they can earn from the industry. Along the lines suggested above, monitoring of individual firms by banks may then be a device to reduce or even eliminate the moral-hazard problems that otherwise prevent cartelization.⁵

Indeed, on the basis of the arguments of Yanelle (1989b), one might argue that in the absence of any countervailing effects such an involvement of banks in industry cartelization is to be expected. As cartelization increases the gross returns flowing from industry to its financiers, it will also improve the position of the enforcing banks in the competition for funds. In the absence of countervailing effects, the process of competition for funds should thus give rise to a banking industry which is concentrated or coordinated enough to impose cartel behaviour on its industrial clients, using the returns to attract deposits.⁶

One aspect of the historical accounts is missing from the monitoring models, but should be easy to accommodate. Whereas the monitoring models stress the banks' collection of information *about* firms, historically, the provision of information and advice *to* firms has also been an important part of the bank-firm relationship. Today this aspect may be even more important: if Deutsche Bank is involved with the acquisition program of Daimler-Benz, the relationship probably has more to do with Daimler-Benz's demand for information about other firms and industries than with the moral hazard problems in the relation between Daimler-Benz and its financiers. However, there should be an interdependence between the provision of information to firms and the collection of information about firms that is stressed in the monitoring models. One

activity supports the other, so there should be economies of scope. More generally, the intermediary that is involved with many industries at once will enjoy economies of scope in the provision of information to its clients. The question then is how the interdependence between information provision to firms and information collection about firms affects the functioning of financial intermediation as delegated monitoring.

5 Financial intermediation as a mechanism of commitment

I now consider the notion that financial intermediation may provide a *mechanism of commitment* in a long-term relationship. So far, I have implicitly assumed that entrepreneurs and financiers can enter into binding contracts that specify all future actions and outcomes subject only to the incentive-compatibility constraints that are imposed by the information structure. If such complete contracts can be written and enforced, then commitment is not a problem.

For several reasons though, the assumption of complete and binding contracts is problematic.

It may be too difficult to write a complete contract that specifies actions and outcomes for all periods and all relevant contingencies. Many aspects of the relationship may therefore be left implicit – and hence unenforceable in the courts (Grossman and Hart, 1986). Even where contracts do contain explicit provisions, the courts may be unable or unwilling to enforce them. They may lack the information required for enforcement, or they may find that contractual provisions conflict with legal rules that take precedence, e.g. anti-usury laws.

An *ex ante* (second-best) efficient contract may prescribe *ex post* inefficient outcomes for certain contingencies, so *ex post* all parties to the contract may find it preferable to rescind the initial provision and replace the inefficient contract outcome by another outcome that is efficient. Thus an incentive contract with monitoring that requires punishment of 'bad' behaviour will not be 'renegotiation-proof' if the punishment imposes costs on the financier who carries it out as well as on the entrepreneur who suffers it (Bolton, 1990; Gale and Hellwig, 1989).

The relevance of these considerations can be gathered from Mayer's (1988) example of the firm in financial distress that needs a fresh infusion of funds. As in other cases where outside finance is needed, the funds may be available if the financiers can expect to receive a fair portion of the returns whereas they may not be available if the financiers expect to

receive only a small portion of the returns. However, the returns to a successful rescue operation – like the returns to a successful new venture – accrue not just during the next few periods but during the entire subsequent life of the enterprise. The question then is to what extent the firm can commit itself to making the financier share in the later returns as well as the earlier returns to the rescue operation.

If the firm and its financiers can write a complete, binding long-term contract, there should be no problem. However, such a contract may not be feasible, say because it is too difficult to specify and enforce provisions that concern the sharing of returns that accrue five years hence with today's financiers. If indeed commitment through long-term contracting is infeasible, then, according to Mayer (1988), financial intermediation with a close relationship between the bank and the firm may provide an alternative mechanism of commitment.

Specifically, Mayer suggests that Japanese banks are more willing to engage in corporate rescues than financiers elsewhere because the bank-firm relation in Japan involves a mutual long-term commitment. Some rather striking quantitative evidence on this point is provided by Hoshi *et al.* (1989c). For a sample of Japanese firms, they find that the cost of financial distress is significantly less for firms that have close relations to a 'main bank' than for firms that do not. Specifically, firms that have close banking ties 'appear to invest more and perform better' than firms that do not have such ties.

From a theoretical point of view, the question is why intermediation can serve as a mechanism of commitment. What are the forces at work? In what sense does Mayer's idea carry us beyond the notion of financial intermediation as delegated monitoring?

A preliminary answer to these questions is given by Fischer (1990). Following Mayer, Fischer observes that the main threat to a long-term commitment is due to competition from other financiers at an interim period when it is already clear that the rescue operation (the new venture) was successful, but the returns have not yet been fully reaped. Even if at this interim stage the firm stays with the previous financier, such competition may force the previous financier to improve his terms to a point where he just covers the opportunity cost of additional funds, but no longer receives a compensation for the risks that he took initially and that happened to have come out well. The question is why a 'main bank' relation of the Japanese type should restrain this interim competition.

To answer this question, Fischer considers a model with two types of firms ('good' and 'bad') in two periods. Each firm has one project per period. Financiers that finance a firm in the first period subsequently have better information about the firm's type. This information advantage

mitigates the competition from outside financiers in the second period. The outcome of competition among financiers in the second period depends on the distribution of information about the firm's type:

If no financier has superior information, (Bertrand) competition among the financiers drives their expected profits from the second projects to zero, i.e. all surplus from that project stays with the firm. If exactly one financier has superior information about the firm's type, this financier retains the contract for the second project; indeed he is able to appropriate some of the surplus on that project because – as in Broecker's (1990) analysis of competition with prior monitoring – the other financiers are afraid of a 'winner's curse' and bid less aggressively than they would under homogeneous information.

If two or more firms have superior information about the firm's type, competition among them drives their expected profits from the second project to zero; as in the first case, all surplus from the second project stays with the firm.

Ex ante, before the first project is undertaken, neither the firm nor the potential financiers know the firm's type. From the financiers' perspective, the loss they make on the 'bad' type has to be compensated by the gain they make on the 'good' type. Such compensation may require them to appropriate some of the returns on the 'good' type's second project as well as the return on his first project. If this is the case, one should expect to see a pattern of finance whereby the first project is financed by exactly *one* financier who thereby gains an information advantage, so subsequently he can appropriate additional returns in spite of the potential competition from outside financiers.

Thus for certain parameter constellations, the equilibria of Fischer's model exhibit some of the key features of the 'main bank' relation in Mayer's account:

In equilibrium, the firm has exactly one financier.

As the relation between the firm and the financier develops, the financier obtains an information advantage over outside financiers. The one financier's information advantage commits the firm to the relation by reducing the strength of competition from outside financiers.

The commitment of the firm to the financier supports the financier's initial willingness to supply funds to the firm, support a rescue operation or provide startup capital.

Fischer does not actually analyse intermediation. He merely shows that, if financiers have sufficient funds, then exclusive financing by one financier

may emerge in an equilibrium because exclusivity serves as a commitment device. However, his model of exclusivity and commitment can be turned into a model of intermediation by the same procedure that was used to turn models of monitoring into models of intermediation. Namely, if there are many small investors, the gains from exclusivity in the financing of a firm cannot be reaped unless there is an intermediary that collects funds and then acts as the unique financier of the firm. As for the monitoring models, the question is simply whether the gains from exclusivity exceed the costs of intermediation.

There are thus similarities as well as differences between the notion of financial intermediation as a commitment device and the notion of financial intermediation as delegated monitoring. Both approaches find that exclusive financing of the firm by one financier is advantageous; yet, if outside capital is diffuse, exclusive financing is only possible through intermediation. However, the two approaches differ in the reasons they give for the advantages of exclusivity. In the monitoring models, exclusivity is a way of exploiting technical scale economies: monitoring by two financiers is more expensive, but no more effective than monitoring by one financier. In Fischer's commitment model, exclusivity is a way of reducing possible conflicts between financiers: at the interim stage, competition between financiers would destroy the 'good' firm's commitment to turn over second-period excess returns in order to pay for the initial finance.

The problem of possible conflict between financiers is an important one that shapes financial relations quite extensively. The problem is particularly relevant just before and in bankruptcy when financiers are most concerned about their shares in the remaining assets of the firm. The creditor who fears an impending bankruptcy will try to withdraw his loan at face value before bankruptcy is declared. At the very least he will try to have some assets singled out as collateral for his loan. Either measure is likely to deepen the firm's difficulties, to precipitate the event of bankruptcy, and to make a reorganization and continuation of the firm more difficult. There is thus a presumption that distributional conflicts between financiers are an important factor in premature liquidations of firms that might more profitably be reorganized.⁷ Such inefficiencies too should be avoided if the firm's financing was altogether in the hands of one financier.

At this point, we encounter a rather serious difficulty, which actually concerns both the Diamond and the Mayer-Fischer approaches to financial intermediation. According to both approaches, any one firm should receive financing from just one financier. How then do we explain the observation that firms typically have more than one source of outside finance?

A superficial answer to this question might point to the assumption of risk-neutrality on all sides that is common to all models. Once firms reach

a certain size, presumably risk-averse intermediaries have a diversification incentive to share the risks of the firms they finance. While this point is undoubtedly important, it does not entirely answer the question.

In particular, it does not explain why even small debtors have both bank loans and various forms of trade credit. This is the more remarkable since trade creditors do not usually have a comparative advantage in assessing creditworthiness and moreover, in the event of bankruptcy, the rivalry between trade creditors and banks seems to be particularly costly. For the case of secured loans of different types, Weskamp (1989) suggests that having different creditors with different collaterals may be advantageous because the different creditors have different comparative advantages in disposing of assets in the event of bankruptcy. However, even this analysis leaves unexplained the rather substantial amounts of unsecured forms of credit provided by sometimes very heterogeneous sets of trade partners. In other words, if we accept some version of financial intermediation as delegated monitoring or financial intermediation as a commitment device, why do we observe so much additional finance that does not avail itself of the benefits of intermediation?

From a theoretical perspective, it seems that we need a more systematic account of the relation between exclusivity and commitment. The discussion so far has only considered the problem of committing the firm to a long-term relation with its financier(s). We also have to consider the reverse problem of committing the financier(s) to the terms of a long-term agreement with the firm. With respect to this reverse commitment problem, *exclusivity may actually be disadvantageous*.

I give two examples to illustrate the point. First consider the problem of commitment to an *ex ante* efficient contract that prescribes *ex post* inefficient outcomes for certain contingencies. For example, such a contract might prescribe bankruptcy and inefficient liquidation after certain outcomes in order to provide incentives for the firm's management to choose strategies under which these outcomes are unlikely. If there is just one financier, this contract is not renegotiation-proof because, once the given contingencies arise, both parties have an incentive to rescind the initial contract and to carry the firm on. In contrast, a renegotiation is not so easy when there are many financiers. In this case, the distributional conflict between financiers may preclude the attainment of an *ex post* efficient outcome (continuation of the firm) and thereby enhance the credibility of the *ex ante* efficient threat of *ex post* inefficient liquidation in some contingencies. From an *ex ante* point of view, the very inefficiencies that arise from conflicts between financiers may actually be desirable because they weaken renegotiation-proofness constraints and strengthen the financiers' commitment to the initial contract.

Empirically, the argument is illustrated by the contrast between the

international debt crises of the 1930s and the 1980s. In the 1930s, most country debts took the form of widely held, publicly traded bonds. When the debtors got into difficulties, renegotiations with the multitudes of creditors were all but impossible, so the bonds just went into default. In contrast, in the 1980s, most country debts took the form of loans from a few hundred banks. Coordination of the creditors and the renegotiations of the debtors with the consortium of creditors were feasible, so the loans did not officially go into default, but were merely rescheduled. From an *ex post* point of view, such rescheduling may be desirable, but from an *ex ante* point of view the prospect of being able to avoid default through rescheduling may have rather adverse incentive effects (Hellwig, 1977).

A second example concerns directly the Mayer-Fischer notion that exclusivity reduces the strength of interim competition from other financiers and serves to commit the firm to its 'main bank' that has put up the initial finance. Ordinarily we think of competition as a mechanism of protection, so any weakening of competition from outside financiers should expose the firm to the possibility of an abuse of power by the 'main bank'. In the absence of effective competition from other financiers, why shouldn't the 'main bank' raise the interest it demands, say because of 'unforeseen' refinancing difficulties?

To see the impact of these considerations, go back to von Thadden's analysis of intermediation, monitoring and long-term investment. In von Thadden's model, the 'good' firm is willing to choose the long-term project because it has some assurance that interim finance will be available if monitoring enables the financier to distinguish it from a 'bad' firm. Suppose now that the financier's commitment to provide interim finance is not legally binding, say because the courts cannot verify the outcome of his monitoring. In this case, he can threaten to withhold the required interim finance unless his share of the overall returns is increased. In the absence of competition from other financiers, this threat will be effective, and the entrepreneur will have to give in. If he foresees this at the time when he chooses his investment horizon, he may prefer to choose a sequence of short-term projects after all, where he is less exposed to such abuse of power by the financier.⁸

In contrast, if several financiers are involved – and if all of them have the information provided by monitoring – then competition among these financiers will protect the entrepreneur. Anticipating this, he will choose the long-term project after all. Here it is the *lack of exclusivity* that serves to commit the financiers to the initial contract.⁹

More generally, there seems to be a certain tension between the problem of committing the firm in a long-term relation with its financiers and the problem of committing the financiers in a long-term relation with the

firm. Exclusivity as a mechanism that reduces the one problem may at the same time exacerbate the other problem. At this point, we are simply in need of a more systematic study of the functioning of different commitment mechanisms, the tradeoffs between different types of commitment and the relation of these mechanisms to financial intermediation.

6 Inside finance and the emancipation of firms

To conclude this discussion, I return to the issue that separates Gerschenkron and Mayer. To what extent should a system of corporate finance based on intermediation through a 'main bank' be regarded as internally stable? Mayer (1988) seems to believe that the superior performance of such a system is a guarantee of its persistence over time. In contrast, Gerschenkron (1962) regards it as being transitory with firms depending on outside finance through banks *only* until they have enough inside finance available.

Gerschenkron's position is based on the assessment that, around the turn of the century, German industrial companies became rather less dependent on their banks than they had been during the startup phase. This assessment seems to be shared by historians (e.g. Feldenkirchen, 1979; Pohl, 1983) as well as contemporaries (Jeidels, 1905; Riesser, 1910). This development seems to have been due to two factors:

Firms in certain industries, e.g. chemical companies, were increasingly able to finance themselves by retentions.

As firms grew, banks were rather less able to bear the risk exposure associated with exclusive financing, so exclusive financing of firms by single banks was replaced by consortial financing.

The little evidence that we have suggests that these accounts of Germany at the turn of the century are still relevant today. Thus, Fischer's (1990) study of financial relations between banks and firms in Germany reaches the following conclusions:

For all but the smallest companies, exclusive financing by a single bank is the exception rather than the rule.

There is no evidence that banks have information advantages that enable them to avoid bankruptcy risks.

There is no evidence that the 'main bank' relation makes for a greater willingness to aid the firm in financial distress.

According to Fischer, the market for loans to firms in Germany displays a competitiveness that belies the predictions of exclusivity given by Mayer

or by his own theoretical analysis. This competitiveness is due to the following factors:

The larger, publicly traded companies can avail themselves of organized markets for their securities.

The medium-size, non-traded companies have a conscious policy of maintaining relations with a handful of competing banks.

All companies have a conscious policy of making sure that reliance on outside finance does not endanger their independence.

Similar patterns can also be observed in other countries. Thus Hoshi *et al.* (1989a, b) report that in Japan, too, the larger, more profitable companies avail themselves of the newly developing organized markets to become more independent of their banks. Preliminary findings for medium-size, non-traded Swiss companies also confirm the importance of bank competition and of inside finance.

Altogether the empirical evidence suggests that the 'main bank' relationship as discussed by Jeidels (1905), Mayer (1988) and Fischer (1990) is somewhat less stable than one might have expected. There is a certain tendency for firms to emancipate themselves from such a relationship, using markets, competition among banks and, above all, reliance on inside rather than outside finance.

How are we to assess these tendencies? The emancipation of firms from close banking relationship is certainly not costless. Recall the observation of Hoshi *et al.* (1989c) that the costs of financial distress in Japan are significantly larger for firms without close banking relations than for firms with close banking relations. For firms that are not in financial distress, Hoshi *et al.* (1989a, b) report a similar observation: hence the emancipation from a 'main bank' relation goes together with a significant increase in the sensitivity of current investment to fluctuations in current earnings and liquidity. Bank loans are less used and/or less available to smooth over fluctuations in earnings.

To be sure, such increased sensitivity of investment to earnings and liquidity is to be expected when firms rely increasingly on inside finance. The problem is that investment opportunities are typically less than perfectly correlated with current earnings, so too close a relation between earnings and investment is bound to entail inefficiencies in the allocation of funds for investment. The question is whether these costs of firm emancipation can be taken to be balanced – or more than balanced – by benefits accruing elsewhere.

The basic question is really what are the mechanisms underlying the firms' reliance on inside finance and their desire to be independent from outside financiers. Given that practically *all* financial systems that we

know involve a substantial reliance on inside finance (Mayer, 1988), it is remarkable how little we know about the factors behind the use of inside finance and what are its implications for the functioning of the financial system.

From the perspective of Jensen and Meckling (1976), one might argue that inside finance has priority because the agency costs of inside finance are lower than the agency costs of outside bank or market finance. This is also the explanation given by Myers and Majluf (1984) in the context of a model with asymmetric information and signalling. Inside finance is taken to have no agency costs because it represents the use of funds available to the firm on account of the firm itself. Outside finance does have agency costs (signalling costs, monitoring costs, simple inefficiencies) because information asymmetries and externalities preclude the attainment of a first-best allocation in the arrangement between the firm and its outside financiers.

From this perspective, the Hoshi *et al.* observation of investment sensitivity to current earnings should be seen as evidence for the agency costs of *outside* finance: investment projects that are expected to be profitable under internal finance are deemed to be unprofitable under outside finance when the agency costs of outside finance are added to the mere opportunity costs of funds. The inefficiency in the allocation of funds across firms that results when investment opportunities are less than perfectly correlated with earnings is nothing but an element in the overall agency cost of outside finance.

In passing, I note that Diamond (1989) gives a very similar explanation for the substitution of bank finance by market finance in the top segment of the very large and profitable companies. In his analysis, the agency costs of direct finance for such companies are low because their track records provide the market with enough information about them. Presumably one could also argue that at least some of these companies are so large and so well diversified in themselves that their debts may be considered riskless and hence free of agency costs.

The common theme of these analyses is that observed financing patterns represent efficient (second-best) solutions to given information and incentive problems. Shifts in financing patterns reflect changes in the data of the problems, e.g. reliance on outside finance decreases as more agency-cost-free inside finance is available; reliance on market finance increases as the agency cost of market finance goes down.

I am not convinced that this is the entire story. The interpretation of financing patterns as efficient solutions to given information and incentive problems is based on the presumption that the financing decision itself is not subject to such problems. Thus Jensen and Meckling (1976)

consider the situation of a risk-neutral owner/manager who has not yet obtained any outside finance. For such an owner/manager, inside finance involves no agency costs because both the costs and the benefits of his choices under inside finance concern only himself, i.e. no externalities are involved.

In contrast, when there are already some outside claims to the firm, the financing decision itself may affect the interests of the outside claimants, so a new agency problem arises. In particular, when there are outside shareholders, the costs and benefits of inside finance concern these outside shareholders as well as the firm's management. To the extent that management has discretion over the financing decision, the following problems can be expected to arise:

To the extent that management underestimates the portion of the costs of inside finance that falls on shareholders, there may be a bias towards excessive retentions (Jensen, 1986).

To the extent that projects provide non-pecuniary private returns to management as well as financial returns, there may be a bias towards projects where these private returns are particularly high. Thus, management may prefer to hold 'reserves' in the form of real estate rather than financial securities because the discretion it has on the valuation of real estate and the realization of book profits provides a way to conceal fluctuations in operating earnings and thereby to reduce management's accountability to the firm's outside financiers. One typically observes that bankruptcies are declared late because, for a substantial period prior to bankruptcy, management was able to use reserves in order to conceal the substantial difficulties that the firm encountered.

Similar considerations apply to the emancipation of a firm from a 'main bank' – be it through market finance, bank competition or simply reliance on inside finance. From the perspective of Jensen and Meckling (1976), this is a response to the agency costs of 'main bank' finance, e.g. the prospect of a squeeze where the 'main bank' might use the threat of cutting off interim financing to appropriate a larger portion of the firm's returns. From the perspective of Mayer (1988), the firm's desire for independence may simply be a breach of the implicit prior contract whereby the bank provided startup or rescue finance in return for a substantial share of the firm's subsequent profits.

Here again, we encounter the need for a more systematic analysis of the relation between financing patterns and commitment mechanisms. As yet we are only beginning to understand the dynamic interactions between firms and their financiers. A more systematic analysis is likely to provide

us with a rather more differentiated assessment of the role of inside finance and the tendency towards firm emancipation from close banking relationships.

NOTES

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- 1 For a concise formulation of the problem, see Landes (1969, pp. 348ff). An up-to-date account of the debate on the role of German banks is given by Wellhöner (1989, chapter 5).
- 2 To be sure, Gerschenkron acknowledges the possibility of 'forced saving by the money-creating activities of banks'. However, he treats this possibility as secondary relative to the 'collection and distribution of *available* funds' (my emphasis). In contrast, when he discusses the role of the state in Russian industrialization, he emphasizes scarcity of capital at the aggregate level and the use of 'the compulsory machinery of the government . . . in directing incomes from consumption to investment'.
- 3 The firm's problem here is akin to that of a beginning assistant professor who has to anticipate whether his tenure committee will take a lack of output after five years as an indication of unproductiveness or an indication of productiveness in a very long-term research strategy.
- 4 Strictly speaking, Diamond only requires that unobservable, presumably project-specific risks be diversified away. Commonly observable, in particular market-wide risks would be unproblematic. However, it is not clear that the risk-bearing discussed by Tilly falls altogether under this category.
- 5 Monitoring and prevention of too competitive behaviour actually was the main purpose of the Austrian Kontrollbank at the turn of the century. I am grateful to Erisch Streissler for this information.
- 6 The cartelization example should make clear that the analysis presented here is entirely positive. No welfare or policy analysis of bank finance and bank relations with industry is intended. Any such normative analysis would have to distinguish rather carefully between the different types of gains that entrepreneurs and their financiers can derive from delegated monitoring.
- 7 A remarkably clear discussion of these issues is given by Weskamp (1989). Writing from the perspective of the Coase theorem, she tried to identify information asymmetries and bargaining costs that actually prevent efficient reorganizations when there are distributional conflicts.
- 8 A related problem of underinvestment due to a distributionally motivated threat of premature liquidation by the financier is discussed by Hart and Moore (1989).
- 9 Mayer (1988) mentions the problem of committing the financier to the provision of interim finance for a long-term project. However, he does not see that the exclusivity of the 'main bank' relation, which commits the entrepreneur to the financier, has precisely the opposite effect for the reverse commitment problem.

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