Brichs Serra, Elisabet; Buch, Claudia M.; Nienaber, Thomas

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– Evidence from Germany and the US –

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Elisabet BRICHS SERRA, Claudia M. BUCH, and Thomas NIENABER

Institut für Weltwirtschaft an der Universität Kiel
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Kiel Institute of World Economics
Düsternbrooker Weg 120, D - 24105 Kiel

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Elisabet Brichs Serra
Thomas Nienaber
Kiel Institute of World Economics - Advanced Studies Program -
Düsternbrooker Weg 148
D - 24105 Kiel
Phone: *49-431-84261
Fax: *49-431-85853
E-Mail: brichs-serra@asp.ifw.uni-kiel.de
nienaber@asp.ifw.uni-kiel.de

Dr. Claudia M. Buch
Kiel Institute of World Economics - Department V -
Düsternbrooker Weg 120
D - 24105 Kiel
Phone: *49-431-8814-332
Fax: *49-431-85853
E-Mail: cbuch@ifw.uni-kiel.de

Abstract

In the discussion about the structure and evolution of financial systems, the US separated and the German universal banking system are commonly considered as antipodes. This paper shows that the differences in the role of banks in these two economies are less pronounced than the conventional wisdom suggests. Furthermore, prevailing differences can be explained by a number of factors other than banking regulations. Hence, the distinction which is commonly drawn between universal and separated banking systems can be misleading and tends to underrate the ongoing convergence between the systems. [89 words]

Keywords

JEL Classification: G1 (General Financial Markets), G2 (Financial Institutions and Services), G32 (Financing Policy; Capital and Ownership Structure).

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1. INTRODUCTION[1]

The world's financial markets have been characterized by drastic changes over the past two decades: Technical improvements, financial innovations, and the liberalization of financial markets have intensified cross-border competition and promoted the globalization of financial services. These changes, together with the regulatory reforms which are currently at stake in Europe, in the United States (US), and in a number of emerging market economies have kindled the discussion whether there exists a first-best financial system. If this were the case, a shift towards the dominant system would increase welfare in the countries that operate under a different system.[2]

Conventional wisdom suggests that (universal) banks dominate the German, bank-based financial system. Specialized US banks, in contrast, play a less pronounced role in the US American, market-based financial system.[3] The discussion about the advantages and disadvantages of the respective system is rather controversial, and, as a result, one or the other system is favored, as if these two systems were mutually exclusive. Studying the structure and evolution of these two financial systems can thus provide useful insights for policy decisions and theoretical studies alike.

This paper attempts to show (i) which differences between the German and the US financial system actually exist and (ii) what underlying factors can explain these differences. Of course, this is not the first study to compare the structure of financial systems. Some previous surveys (Borio, 1995; Corbett/Jenkinson, 1996; Rajan/Zingales, 1995) have shown that some basic features of bank- and market-based financial systems do not differ as much as is commonly believed – or at least that a simple classification of financial systems is not possible. The present paper sets itself apart from these earlier cross-country studies because it takes a more narrowly defined approach. It focuses only on two financial systems – the German and the US –, and it mainly restricts itself to the role of banks in the process of financial inter-

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1 Some sections of this paper draw on Brichs Serra/Nienaber (1996). The authors would like to thank Ralph P. Heinrich for helpful comments on an earlier draft.

2 However, if the structure of a financial system depends on its evolution over time, i.e., if path-dependence prevails, then a country cannot simply adopt a new system.

3 Note that this standard classification is not always clear cut. In the United Kingdom, for example, banks play a relatively important role, while the financial system is typically characterized as market-based.

mediation. Special attention is paid to the financing of small firms and to the function of equity participations of banks in non-financial firms. Hence, the paper allows for a more detailed analysis of institutional factors and of differences in financial structures.

Our results show that the role of banks is actually not that much different in the two economies. Apart from banking regulations, distinctions in tax regimes, in bankruptcy legislation, in the pension systems, and not least in accounting systems have a significant impact on the structure of financial markets that we can observe. These differences become smaller over time as a result of the ongoing international competition among regulatory frameworks and due to a trend towards universally accepted supervision standards.[4] Consequently, we expect the systems to converge to a system with less regulated financial markets than the German ones and a less regulated banking system than the US one. Our findings have important policy implications for regulatory reforms in Germany and in the US. In Germany, improving the allocation of financial funds, first of all, requires overall changes of the institutional framework of financial markets rather than limitations to the operations of banks. In the US, liberalizing banking regulations may be desirable to strengthen the role of banks in the corporate governance of firms. In short, universal versus separated banking may be the wrong dichotomy. Quite to the contrary, the optimal financial system combines features of bank- and market-based systems.

Section 2 summarizes the main aspects of banking regulations in Germany and in the US and outlines the current reform proposals. In Section 3, we briefly lay down some basic theoretical considerations on the role of financial intermediaries and describe the stylized structure of bank- and market-based financial systems. Section 4 develops four hypotheses on the structure of the German and the US financial systems and provides empirical evidence to check the validity of these hypotheses. Section 5 concludes.

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4 A case in point of the latter are the rules of the Bank for International Settlements which, nevertheless, still allow for national discretion. For details see Hall (1992).

2. CHANGING BANKING REGULATIONS: THE OPEN POLEMIC

A series of banking crises in the US during the 1980s, and public discontent about the alleged power of German banks have motivated discussions about regulatory reforms in both countries. This section briefly reviews the current legal structures and outlines the major reform proposals.

2.1. US Banking regulations

The US banking system is, as a result of specific historical circumstances, highly regulated (Lewis/Pescetto, 1996: 72*n*).[5] Basically, we can differentiate between restrictions concerning the type of business and geographic restrictions (Table 1).

US commercial banks were allowed to directly provide investment banking services, i.e., to underwrite and to invest into certain types of securities, from 1812 until the end of the 19th century. Afterwards, these services had to be provided through securities affiliates (Saunders/Walter, 1994: 85). Besides, in 1914, restrictions were imposed on the membership of bankers in the board of directors of firms (Calomiris, 1993). Hence, even before the passage of the Glass-Steagall Act in 1933, there was no truly universal banking system in the US. Within the limits to their activities, however, universal banks prior to 1933 did achieve relatively good results (Kroszner, 1996). In particular, securities underwritten by commercial banks tended to outperform those underwritten by investment banks.

As a reaction to the Great Depression, the Glass-Steagall Act imposed the separation between commercial and investment banking in order to isolate commercial banks from the risk of the securities business, to avoid the concentration of financial power, and to minimize conflicts of interest. Other, such as geographical, restrictions were not introduced by the Act but rather confirmed (Roe, 1994: 94). Market forces worked, however, to circumvent the separation between commercial and investment banking because bank holding companies, which owned both commercial and investment banks, were founded. As a counteraction, the Bank Holding Companies Act of 1956 prohibited bank holding companies from owning equity in non-financial firms. However, prohibiting only the holding of two or more companies gave rise to

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5 For a more detailed description of the US banking system see Möschel (1978).

one-bank holding companies. This, in turn, led to an amendment of the Bank Holding Companies Act in 1970 (Prowse, 1996: 8*n*).[6]

As far as geographic restrictions are concerned, legislation of the federal states and of the confederation restricted US commercial banks from inter-state branching. With regard to intra-state branching, one can – ranked by a decreasing degree of freedom – roughly differentiate between state-wide branching, limited branching, and unit banking. As in the case of business restrictions, group banking via bank holding companies also helped to circumvent the intra-state constraints.

While the restrictions on the activities and geographic expansion of banks were aimed at stabilizing the banking sector, they have not – perhaps not very surprisingly – shielded the US banking system from systemic crises. During the 1980s, the number of bank failures in the US increased dramatically. There were three main reasons for these failures: (i) regional crises, because the performance of banks was strongly tied to regional growth due to the inability to diversify geographically, (ii) insider trade, which was caused by failures in the market of corporate control, and (iii) the deposit insurance system which contributed to moral hazard behavior of the Savings and Loans Associations. As a response to the bank failures, the US American regulatory authorities started deregulating the banking industry in the mid-1980s. The Federal Reserve Board allowed 39 US and foreign banks to establish subsidiaries to conduct limited securities activities (Börsen-Zeitung, 1996). As these banks represent an exception, authorized by the Fed, to Section 20 of the Glass-Steagall Act, they are also labeled "Section-20-Banks". But still, legislation continues to be rather restrictive:[7] The limit on the revenues from the investment banking activities of the subsidiaries has in December 1995 been raised from 10 to 25 percent of the parent bank's total revenues, employees and directors are not allowed to work in both activities, and banks may not assist to market the activities of their subsidiaries.

Since 1989, 43 states allow state-wide branching, albeit to different degrees (Lewis/Pescetto, 1996: 80). In 1995, the Riegle-Neal Interstate Banking and

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6 A former amendment in 1966 did not incorporate one-bank holding companies.

7 The remaining barriers are justified as "fire-walls" that protect the whole company from the risks of the securities business.

Branching Efficiency Act removed nearly all barriers for banks to expand their business to other states. This has already triggered a major process of consolidation, mergers, and acquisitions in the US banking industry. As for now, complete geographical liberalization is scheduled for June 1997 (Müller, 1995).

The regulatory system that was intended to reduce the probability of bank bankruptcies in the 1930s has proven ineffective in the 1990s (Benston, 1990: 318*n*). It has thus been argued that removing the existing regulatory barriers would enable banks to spread risks and to allow for greater competition, which, in turn, would lead to a more efficient allocation of capital. Saunders and Walter (1994: 204) made a simulation analysis for US banks and found that there are potential risk-reductions for the banks by increasing the scope of their activities, and that these reductions are the greater the larger the number of activities undertaken. The most relevant risk-reduction arises from banks expanding into the insurance rather than into the securities business. The big controversy in the US today is how the necessary deregulatory reform should take place. There are three basic proposals (Waters, 1995; Grün, 1995; Müller, 1995):

1. To allow banking groups to enter into the insurance and securities business through subsidiaries, and to allow commercial companies to own banks, and vice versa. As the most liberal proposal, it implies the end of the separated banking system.

2. To allow banking groups to own not only banks, but also securities companies. This is the least liberal proposal, which basically abrogates Section 20 of the Glass-Steagall Act.

3. To allow banks to own investment banks and insurance companies, but not to allow non-financial companies to own banks (or vice versa). As the administration's proposal, it represents a compromise of the first two proposals.

Which of these proposals will be implemented and how the future of the US American banking system will evolve is yet undetermined. To what degree liberalization will finally take place is still under controversial discussion in the US. However, all these alternatives mean a step away from a separated banking system towards a universal banking system. Only in January 1997, the insurance agent's lobby agreed

that banks and insurance companies should be allowed to own each other – thus reversing a position it has held since the 19th century (The Economist, 1997).

2.2. German Banking regulations

The German banking system is defined by most authors as universal, although some legal restrictions prevent all banks from operating as universal banks.[8] The Sparkassen (Savings Banks), in particular, which accounted for almost 20 percent of the banking system's assets at the end of 1996,[9] are restricted in the scope of their activities and in their regional expansion. Generally speaking, universal banking can be defined as *the conduct of a range of financial services comprising deposit-taking and lending, trading of financial instruments and foreign exchange (and their derivatives), underwriting of new debt and equity issues, brokerage, investment management, and insurance* (Saunders/Walter, 1994: 84).[10] Furthermore, German banks can hold shares in non-financial firms. Generally, a bank's investments – including shares and participations – may not exceed its liable capital. This restriction does not apply to participations in other firms which do not exceed 10 percent of the firm's capital, securities which are only held for trading purposes and which account for less than 5 percent of the firm's capital, shares which the bank does not hold for longer than two years, and shares which a bank has acquired to avoid losses in the lending business for a maximum period of 5 years (Zerwas, 1996: E18n). In addition to their shareholdings in nonfinancial firms, German banks hold seats in the supervisory boards of firms and exercise proxy voting on behalf of their private customers. They have thus a large potential to perform corporate control functions.

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8 Restrictions to universal banking activities are mainly based on the Mortgage Banks Law (from 1899, last amended in 1988), the Home Owner's Loan Act (from 1931, last amended in 1972) and the Laws on Public Savings and Giro Banks of the Länder. For a more detailed discussion see Hahn (1995: 1*n*), and Kregel (1992: 245*n*).

9 This number has been calculated from the monthly report of the Deutsche Bundesbank (January 1997).

10 In a fully comprehensive sense, universal banking should also include the issuing of money. But in reality, such a comprehensive universal banking system does not exist any more. The only exceptions are the centrally planned economies of Cuba and North Corea where the central bank has the monopoly on all banking activities (socialist "monobank" systems) (Hahn, 1995: 2). However, in these countries, the banking system plays an entirely different role than in a market-type economy.

The intense competition for internationally mobile capital and the failures – or near-failures – of several well-known German companies in the recent past have called into question the efficiency of the German banking system. The dual role of banks as creditors and shareholders has called forth a public debate on the power of banks. These concerns are mainly prompted by the fact that by relying on a bank as a financial intermediary to solve the principal-agent problem at the corporate level, one creates a new principal-agent problem at the intermediation level (Baums, 1993: 48*n*). As in the US, there are several proposals how to change the German financial system (FAZ, 1996; Schroeder/Schrader, 1996: 9*n*):

1. According to the government's proposal, the number of board members shall be limited, banks shall *not* be allowed to exercise their own votes *and* the proxy votes of their customers if they hold *more* than 5 percent of an enterprise's shares.
2. The proposal made by the opposition goes even further. It intends to prohibit banks to own mutual funds, to abrogate the system of proxy-votes, and to restrict equity holdings in non-financial firms to 5 percent.

An evolution towards a more developed financial system and a more specialized banking business has, in fact, already started. The current trend in Germany is to set up specialized subsidiaries or to buy specialized banks, mergers of larger German banks are being discussed, and some commercial banks have moved their investment banking operations to foreign financial centers.

3. THE STRUCTURE OF FINANCIAL SYSTEMS

A number of factors contribute to the endogenous emergence of financial intermediaries. Asymmetries in information which create a demand for risk reduction and information gathering through intermediaries feature prominently. This section briefly summarizes the main arguments and shows how bank- and market-based financial systems fulfill these tasks.

3.1. The case for financial intermediation

Nowadays, unanimity seems to prevail among economists that financial systems are a relevant variable influencing investment and, therefore, economic growth.[11] The question which particular financial system – bank- or market-based – brings about higher welfare, however, cannot be answered equally unanimously. The role of both banks and financial markets consists in the transformation of savings into investment, i.e., in matching suppliers of capital and investors. On one side of the market, there are companies seeking to raise external finance. On the other side, there are providers of capital such as households and large institutions like pension funds, mutual funds, and insurance companies, looking for investment opportunities. Matching these two sides of the market can be achieved through issuing debt and/or equity either directly in the financial markets or indirectly through banks and other financial intermediaries (Hein, 1988: 252).

Due to the risks that the transformation of capital involves on part of the lender, financial systems have to assume two basic, interdependent functions: risk sharing and information gathering (Black/Moersch, 1996: 3). Risks can result from the possibility of needing cash before maturity (*liquidity risk*) and from the possibility of not recovering the money invested (*investment risk*). The two potential sources of investment risk are pure uncertainty and principal-agent behavior. Whereas the former has its cause in the uncertainty of nature (*uncertainty risk*), the latter results from asymmetric information, i.e., either from hidden information (adverse selection or ex

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11 Recently, there has been a series of studies showing that the financial system of a country is significant for investment and growth. For a survey see King and Levine (1993). Lucas (1988), in contrast, argues that financial development is relatively unimportant for economic growth.

ante asymmetric information) or from hidden action (moral hazard or ex post asymmetric information).

The hidden information problem arises because a company which seeks outside finance as an agent has private information about the riskiness of its projects. Investors as principals will only learn about the quality of the firm after signing the contract (Akerlof, 1970), or not even then.[12] In order to get the contract signed, the agent has thus an incentive to hide detrimental information (*hidden information risk*). In the case of hidden action, the project outcome not only depends on the agent's action but also on exogenous factors, both of which are unobservable. As a consequence, project results cannot automatically be related to the agent's performance – bad luck and bad performance can actually lead to the same outcome (Arrow, 1984). This makes the agent reduce his effort at the principal's expense (*hidden action risk*). The principal-agent problem becomes more grave the more anonymous the investor relationship is, and different financial systems employ different instruments to reduce these risks.

If markets are perfectly competitive and if information can be obtained at relatively low costs such as in an Arrow-Debreu world (Arrow, 1964; Debreu, 1959), a system of direct finance via the financial markets is efficient[13] and will emerge. However, in the presence of market imperfections such as asymmetries in information, the direct allocation of capital may become either impossible or inefficient.[14] Financial intermediaries such as banks thus receive an important role because they operate as delegated monitors (Diamond, 1984), hereby reducing transaction cost of savers which arise from the need to collect information.

Up to now, we have outlined the role and the functions of financial systems in general. In a further step, we want to see how a market-based financial system with its

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12 Whether the principal gets to know this ex ante hidden information depends heavily on the properties of the underlying good. According to Nelson (1970: 311*n*), search and experience goods can be distinguished; Darby and Karni (1973: 68) introduced the term of credence quality. Because the investment relationship is characterized by experience and trust as a credence quality, ex post, it is at least costly or even impossible to reveal ex ante hidden information.

13 Nowadays, the assumption of capital markets efficiency in its semi-strong form is generally accepted. It implies that share prices reflect all freely available information.

14 Although there may exist other market imperfections which cause transaction costs such as the spatial separation of agents (Hellwig 1994: 2*n*), we will focus on the problems resulting from asymmetries in information in the remaining part of the paper.

specialized banks and a universal banking system accomplish the functions of information gathering and risk sharing.

3.2. Market-based financial systems

In a market-based system, the two functions risk sharing and information gathering are mainly carried out via capital markets. Each investor diversifies his risk individually. In order to make the right investment decision, investors have to gather a substantial amount of information about the different investment possibilities. Because information is not freely available,[15] and because the value of the information obtained can only be determined afterwards ("information paradox"), a single investor can eventually find the information gathering process too costly and abstain from the highly anonymous capital market.[16] To avoid that result but rather to facilitate the match between suppliers and consumers of capital, a market-based financial system requires a substantial amount of publicly available information. Since prices play an important role in conveying information, they must frequently adjust and thus steadily reflect newly available information.

The availability of information reduces the *hidden information risk*. As a consequence, the ex ante risk decreases, and more funds are channeled to the capital markets. This leads to a greater liquidity and therefore minimizes the *liquidity risk* of the investors as well as the *uncertainty risk* through the possibility of portfolio diversification.[17] Yet, the *hidden action risk* remains. In a market-based system, the market for corporate control serves as safeguard against adverse management action. If ownership and control are separated, liquid markets are an important requisite for the market for corporate control to work efficiently (Gorton/Schmid, 1996: 31). A market-based system does not allows for noise suppression: Traditionally, the higher volatility in such a system has been ascribed to the steady flow of new information about payoff streams and discount rates, information that is made publicly available (Allen/Gale, 1995: 195*n*). Hence, prices serve as signals of a company's perform-

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15 At least, opportunity costs in terms of time incurred by gathering information have to be taken into account.

16 The extreme case would be a failure of the capital market as Akerlof (1970) shows in his famous example of the market for 'lemons'.

17 It should be clear that portfolio diversification only leads to a reduction in the unsystematic risk whereas the systematic or market risk cannot fully be diversified away.

ance. Low share prices as a signal of poor performance lead the market agents to expect an increase in the shareholder value if a takeover takes place and if the current managers are replaced by more efficient ones. This potential increase in shareholder value creates incentives to make the bid. The threat of a takeover bid in case of bad performance may force managers to concentrate on maximizing the short-run value of their companies' shares.

3.3. Bank-based financial systems

In a bank-based financial system, banks assume the function of gathering information and reducing the risk of investors.[18] Banks as financial intermediaries reduce *liquidity risk* by pooling across individuals with different liquidity preferences, and they minimize *uncertainty risk* by diversifying across uncorrelated investments. They lower the *principal-agent problems* by information gathering and by direct monitoring of the agent's behavior. With banks as intermediaries, the market is no longer anonymous because banks have a close relationship to their clients and, consequently, can acquire a reputation of providing reliable information.

Universal banks, in particular, are allowed to underwrite securities and to hold equity in non-financial firms. This is the main characteristic which sets them apart from separated banks. Instead of the market for corporate control, universal banks accomplish the function of corporate governance. The role of banks in corporate governance is particularly relevant in publicly listed corporations with small scattered shareholders. There are three channels through which universal banks as being simultaneously equity- and debtholder of a firm can exert corporate control functions (Baums, 1993: 25*n*):

1. In the shareholder meetings, banks represent both their own shares and the shares of those customers who delegated their votes (proxy votes).
2. Banks are the firm's "Hausbank", i.e., they are the exclusive providers of funds for the firm (Allen/Gale, 1995: 184*n*).

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[18] If public information is not sufficiently available, banks – contrary to individuals – dispose of the bargaining power that is necessary to impose signaling or self-selection mechanisms.

3. Banks have representatives on the board of their client-firms ("interlocking directorates"). As the appointment and dismissal of management is a function of the supervisory board, the supervisory board is an essential tool of corporate governance.

However, the impact of universal banks on the corporate governance of firms can be double-edged:

On the one hand, the close relation between banks and companies is advantageous for both sides. The companies benefit from improved access to external finance, they can profit from the bank's expertise in financial affairs, and they are able to concentrate more on their core business. The banks improve their information about the company and, consequently, are able to control the managers more closely, thus reducing the risk of managerial hazardous behavior (Baums, 1993: 22). The theory of optimal corporate control suggests that debt holders should monitor a firm in bad states of the world, and that equity holders should play this role in good states of the world (Dewatripont/Tirole, 1994: 140). Accordingly, banks which simultaneously are debt- and shareholders are able to impose an optimal governance structure on non-financial firms (Steinherr/Gilibert, 1994). Because of their informational advantage, bank influence may outperform other arrangements of corporate governance. The close relationship between banks and companies favors internal settlement of conflicts, i.e., voice, rather than external settlement through the market, i.e., exit (Franks/Mayer, 1995: 187*n*). This enables managers to focus on long-term strategies: equity holdings remain stable, and so do the monitoring institutions. If there is any short-term problem, it can be explained to the supervisory board rather than being signaled to the anonymous market (Chirinko/Elston, 1996a: 28*n*).

On the other hand, the fact that banks hold debt and equity of a company can lead to conflicts of interest on the side of the bank and to inefficiencies on the side of the firm if the firm becomes too dependent on its housebank. This dependence may eventually decrease the firm's adaptability to changes. A takeover bid may be repulsed with the help of the bank because of personal links, irrespective of the managers' performance. Furthermore, the firm's management as well as its supervisory board may become either unable or unwilling to take value-enhancing, but unpopular decisions that are difficult to be implemented politically. In this case, the existence of a market for corporate control would be more efficient (Baums, 1993: 55*n*). Conflicts

of interest can furthermore arise between the commercial and investment banking activities because information gained at commercial banking activities can be exploited in trading activities at the expense of retail investors. Generally, the fact that equity holdings of banks may lead to conflicts of interest within the bank and thus cause inefficiencies suggests that the optimal shareholdings of a bank in a firm may be relatively small.

By holding equity of a firm and lending to the same firm, universal banks can exploit economies of scope between different activities.[19] Apart from the enhanced ability to monitor management, there are three reasons why banks may be interested in holding equity of non-financial firms:

- Berlin, John, and Saunders (1996) show that equity holdings of banks may be necessary to ensure that banks and firms as informed insiders do not form coalitions at the expense of non-informed outside stakeholders as, for example, suppliers. Because banks have an informational advantage over suppliers in evaluating the performance of firms, suppliers may consider to delegate the collection of information to banks. Banks and firms, however, have incentives to form a coalition against suppliers. If the firm is distressed, they may claim that the firms is actually healthy. The supplier would then provide production inputs although it would be optimal to close the firm. If the firm is healthy, the coalition may claim that it is actually distressed, hence causing unnecessary (price) concessions from the supplier. In order to align the interests of banks and outside stakeholders, some claims of the banks should thus be subordinated to those of uninformed stakeholders. The authors show that the only feasible way to achieve such a subordination may be a (small) equity stake of the bank in the firm which the bank loses in the case of corporate financial distress.

- Petersen and Rajan (1994) argue that small firms would face difficulties in getting access to bank lending unless banks can charge low early interest rates and get

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19 Although such economies of scope are likely to exist from a theoretical point of view, they are inherently difficult to detect empirically. See Berger/Hunter/Timme (1993) for a review of empirical studies. Lang and Welzel (1995) estimate cost functions of German banks but cannot, due to data limitations, account for the effects of participations of banks in firms. In addition, Calomiris (1993) argues that empirical methods used to detect economies of scope tend to focus on the cost savings for banks rather than welfare implications for the banks' customers.

compensated for these price concessions by charging higher interest rates once the firms mature. Such state-contingent pricing of loans, however, is only feasible in concentrated markets. In competitive markets, equity stakes of banks in firms can instead serve as a substitute for lending relationships because they allow the banks to share in future profits.

- The above models show that it may be optimal for banks to hold small equity stakes in financially healthy firms. The value of these equity stakes is reduced substantially when the firms come into financial distress. In this situation, banks may have incentives to swap some of their existing debt into equity. Such debt-to-equity swaps may enable banks to retain an option value of waiting on their existing claims, to gain greater control over the actions of the distressed firm, and to become more actively engaged in the restructuring of the firm.

4. EMPIRICAL EVIDENCE ON THE ROLE OF BANKS IN GERMANY AND IN THE US

If the US separated banking system and the German universal banking system are really as different as it is often suggested, we would expect to find evidence for certain hypotheses. In this section we bring forward four hypotheses that we consider particularly indicative.

1. *Structure of financial systems:* If the fact that German banks are allowed to operate as universal banks whereas US banks are confined to separated banking is important, the structure and development of financial markets should differ significantly between the two countries. Bank finance, for example, should be of greater importance for German than for US firms.

2. *Small firm finance:* The structure of the financial system should in particular have an impact on the financing of small firms. Due to a lack of publicly available information and thus the prevalence of substantial asymmetries in information, these firms should face the greatest problems in obtaining external finance, and they are most likely to be affected by credit rationing.

3. *Banks and corporate governance:* Universal banks are considered to exert a strong influence on the corporate governance of firms through proxy voting, the seats on supervisory boards that they hold, and through equity stakes in non-financial firms. This influence of banks should affect the performance of firms. In addition, we should find significant differences in the amount of equity holdings of banks in non-financial firms in Germany and in the US.

4. *Activities and profitability of commercial banks:* Differences in banking regulations and a different role of banks in the financial system should ultimately be reflected in the structure of the banking system, i.e., in the balance sheet structure of banks, in their income statements, and in their profitability.

4.1. Structure of financial systems

The different structure of bank- versus market-based financial systems should be reflected in the relative importance of financial intermediaries, and in differences in the financial structures of firms.

In fact, the US capital markets – both stock and bond markets – are highly developed. The rate of market capitalization in the stock market reaches a comparatively high 64 percent of GDP, the number of publicly listed companies is large and continues to increase, and the market shows a comparatively low concentration: the ten largest stock corporations account for only 14 percent of the market capitalization (Table 2). The bond market also plays an important role, the main gross bond issuers being the public authorities (57.6 percent), the financial sector (28.0 percent), and domestic corporations (12.7 percent) (Table 3).

The German capital markets are much less developed and much more regulated than those in the US: The stock market is less significant, there are only 551 listed companies, the market capitalization rate amounts to only 24 percent of GDP, and the market is much more concentrated with the ten largest stock corporations representing 41 percent of the market (Table 2). The bond market is more developed (Allen/Gale, 1995: 183), but German non-financial firms have only a negligible share in this market (0.2 percent) (Table 3). Like in the US, governments and banks are the main issuers of bonds, even though in the reversed order of importance (24.1 percent and 75.7 percent, respectively). This underdevelopment of the German capital markets can be related to the strictness of the regulatory system. For non-financial firms, it is rather difficult to get access to the capital markets directly without calling in financial intermediaries due to the amount of regulatory restrictions, many of which, however, were removed in the early 1990s (Table 4). These adjustments have prompted a gradual process towards financial disintermediation. Hence, a process of securitization seems to be taking place in Germany.[20] The share of securities in total debt finance (bank loans plus securities) has increased from 2 to 6 percent between 1983 and 1993 (Borio, 1995). In the US, in contrast, securities accounted for 20 percent of debt finance in 1993 (1983: 17 percent).

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20 The process of securitization can be observed on the international financial markets since the early 1980s. It makes loans more fungible and may help to reduce the costs of financing. As companies, therefore, may issue secured credits directly more easily – basically via Euronote facilities and Euro commercial papers –, it changes the banks' function.

Despite legal changes intended to ease firms' access to the stock market, equity markets in Germany are still underdeveloped, are mainly used by relatively large firms, and most companies have not been affected by an upswing in IPOs (DBB, 1997). It is therefore interesting to note that in the period between 1870 and 1913 German firms were actually more successful in bringing equity to market, that they faced lower cost of external equity finance than US firms, and that the average issuance size was smaller in Germany than in the US (Calomiris, 1995). This lends some support to the hypothesis that the high costs of raising equity finance in Germany are not the result of an inherent bias of universal banks not to support firms' public offerings. Rather, other regulatory factors are likely to have an impact on the financing decisions of firms.

With regard to stock market turnover and volatility, the German and the US financial system are surprisingly similar (Table 2). Despite the substantial differences in market capitalization, the total volume of traded shares does not differ essentially in both countries with 41 percent of GDP in the US and 35 percent in Germany.[21] In addition, the 12-months rolling standard deviation estimate based on market returns amounts to 0.03 for the US, and to 0.04 for Germany and is thus relatively similar.

CORPORATE FINANCE

As regards the financial structure of firms, the major difference appears to be the greater leverage of German as compared to US firms (Rajan/Zingales, 1995: 1422). Yet, although the debt/equity-ratio was higher in Germany than in the US in 1980 and in 1994, this ratio decreased in Germany from 1.75 to 1.51, whereas in the US it increased from 0.47 to 1.07 over the same period. Even though there is still a considerable gap, the difference thus decreased significantly.[22]

Borrowing from banks represented about 20 percent of non-financial German firms' liabilities in 1994, and less than 17 percent of non-financial US firms. In 1980, it had accounted for 21 percent in Germany versus less than 11 percent in the US (Table 5). Thus, the difference apparently decreases as well. In German non-financial firms, short-term dominate long-term liabilities, and this pattern does not

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21 In other words, the turnover ratio is much lower in the US than in Germany.

22 It must be noted, in addition, that differences in accounting standards complicate a simple comparison of balance sheet ratios (Rajan/Zingales, 1995).

seem to have changed over the period from 1980 to 1994. As a whole, short-term liabilities have more weight in German non-financial firms than in US ones.

A comparison of the balance sheet structure of non-financial firms reflects the historical financing patterns of the capital stock, not the financial sources used to finance current investment. Moreover, balance sheet figures are biased due to differences in accounting standards. Hence, an analysis of the sources of new finance (flows of funds) may give a more accurate picture. Corbett and Jenkinson (1996) provide such evidence, drawing on data provided by the Federal Reserve System and the Deutsche Bundesbank. They compare the *net* sources of finance of firms for four time periods, starting with the period 1970-74 through 1985-89. Hence, the data are not directly comparable to the stock data because, for example, bank loans and deposits are netted out. Their analysis reveals some interesting patterns:

- Internally generated sources contribute the bulk of financial sources for firms' investment both in the US and in Germany. The share of internal finance has even increased from 74.5 to 103.7 percent in the US and from 68.9 to 89.1 percent in Germany between the first and the last period.
- In the US, a decline in the importance of bank finance from 26.6 to 15.0 percent has been accompanied by an increase in bond finance from 15.7 to 24.8 percent. New equity issues have – in the aggregate – made a negative net contribution to the financing of firms in the 1980s.[23] Hence, total market-based finance (bonds plus new equity) has become less important in the US over the decades under review.
- In Germany, bank finance has also lost in importance (15.7 versus 9.3 percent) but this decline has not been accompanied by an increase in (direct) bond finance. Both bond finance and new equity issues are almost negligible in size.[24] Bank-based finance has rather been replaced by internally generated funds.

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23 Interestingly, new equity issues have been far more important for the financing of US firms in the first four decades of the century than afterwards. Until 1940, they contributed on average 16 percent to total financing, between 1940 and 1980 only 3 percent (Singh/Hamid, 1992: 11).

24 Capital transfers, in contrast, have been a relatively important financing source for German firms (about 9 percent on average). This item comprises subsidies and internal sources of finance of state-owned firms.

In view of the large volume of directly raised external finance, it may appear that financial intermediaries and in particular banks play only a limited role in the US. Boyd and Gertler (1995), however, show that the importance of banks is measured incorrectly if their off-balance sheet activities are not taken into account. They argue that the shift of lending away from banks towards the commercial paper market has been accompanied by back-up lines of credit and/or guarantees for most borrowers on these markets. Also, banks often originate loans and sell them to other financial institutions which implies that banks are still fulfilling most of their original functions. Also Borio (1995: 73*n*) shows that formal (liquidity) back-up for commercial paper is particularly significant in the US whereas in Germany formal back-up agreements are much less frequent.

In summary, the data do reveal that some differences in the financial structures of firms do exist but that these tend to become less pronounced over time. Besides, different legal protection of creditor rights as well as differences in tax regimes appear to affect financing decisions at least as much as differences in banking regulations. In Germany, for example, only unsecured creditors are stayed in a bankruptcy proceeding; secured creditors have privileged access to the firm's assets (Kaiser/Kaiser, 1993). In the US, bankruptcy under Chapter 11 implies an automatic stay to be placed on all assets, i.e., secured creditors are affected as well. This requires banks and non-bank creditors to agree on a debt restructuring and may cause a reluctance to lend. Furthermore, since 1990 both debt finance through loans and financing through retained earnings are favored over shares issues in Germany by tax regulations (DBB, 1997).

4.2. Small firm finance

Apart from the corporate control problems of large firms, a second area where asymmetries in information affect the structure and performance of financial markets is the financing of small and, in particular, new firms. Unlike large existing enterprises, small new firms have a short or even no track record, they do not have to publish their financial statements, and their activities may be more vulnerable than those of large diversified firms. Because of the high fixed costs of screening small loan applicants, banks may resort to sorting devices and collaterize small business loans to a substantial degree. Because especially new firms are often collateral-

constrained, they may be excluded from the credit market (Stiglitz/Weiss, 1981). Similarly, the costs of outside equity finance can be expected to be relatively high for small firms.[25]

A priori, it is not evident to what extent the financing of small firms can be expected to differ under universal versus separated banking. The mere fact that universal banks are allowed to hold equity of non-financial firms and to underwrite securities must not directly affect small firms' access to external finance. Since corporate control problems are of limited concern for small firms, the need to align management and investors' interests does not arise and, hence, banks' equity holdings may not be as relevant as for large firms. Similarly, because of the lack of publicly available information and the high transaction costs involved in the analysis of small firms, this group of enterprises is unlikely to raise substantial funds through the issuance of securities. If differences between the financial structures of small firms in Germany and in the US prevail, these may thus be the result of the overall institutional framework of financial markets rather than of banking regulations. Still, it has been argued that the move from separated to universal banking in the US would lead to mergers of banks and to the creation of larger units. If lending by large banks is more transaction- rather than relationship-driven as compared to lending by small banks, the move to universal banking may thus indirectly imply a reduction in lending to small business (Berger/Kashyap/Scalise, 1995; Berger/Udell, 1996).

GERMANY

For Germany, consistent evidence on the financial structure of small and mid-sized firms is scarce because many of these firms are not required to publish their financial statements. The Deutsche Bundesbank (1992) has prepared a relatively comprehensive set of information on the financing sources of firms for the period 1978-1989. The survey covers 18,000 firms from the *Unternehmensbilanzstatistik* of the Deutsche Bundesbank which contributed about 40 percent of industry turnover in 1989 and for which annual reports have been available for the entire period. The sample is thus biased towards relatively large and successful firms. The survey shows, first of all, that the volume of financial sources relative to total turnover varies

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25 See Allen and Gale (1995: 201) for evidence that in the United States underwriting spreads and issuance expenses do in fact decline with the size of the issuance.

with the business cycle, irrespective of firm size. The structure of total financial sources (flows of funds), however, differs for firms of different size (Graph 1):[26]

- Internal sources of finance are on average far more important for small firms (126 percent of total financing) than for mid-sized (102 percent) and in particular large firms (87 percent).
- Equity finance makes a negative contribution to the financing of small (-45 percent) and mid-sized (-28 percent) as opposed to large firms (3 percent).[27]
- Bank debt is more important as a source of finance for small (14 percent) and mid-sized firms (11 percent) than for large firms (0.2 percent). This is consistent with Rajan and Zingales (1995) who find that small German firms have greater leverage than large firms while the opposite holds true for the US.

These main findings are confirmed by another Bundesbank study. Stöß (1996), who analyses two periods (1979-82 and 1988-93) in order to show whether restrictive monetary policies affect the financing of German firms, finds that small firms are more dependent on bank lending than larger firms. Yet, in periods of restrictive monetary policies, bank lending to small firms increases despite a deterioration in the financial indicators of these firms. Although investment of small firms is more adversely affected by restrictive monetary policies than investment of larger firms, this difference can thus not be explained by differences in bank lending.[28] This is consistent with the results of Tsatsaronis (1995) who analyzes the transmission of monetary impulses in four economies, finding no evidence for the existence of a credit channel of monetary policy in Germany. Interestingly, the US would, if anything, be grouped in the same category as Germany.[29] Mainly, Stöß explains his result with the fact that creditor rights are relative well protected in Germany and that

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26 Small firms in this sample have a turnover of less than 10 Mio. D-Mark, mid-sized (large) firms of 10-100 Mio. (more than 100 Mio.) D-Mark.

27 Note that the quality of these data for smaller firms is substantially affected by the lack of a separation between the business and private accounts of the firms' owners (DBB, 1992: 31). To the extent that profits and other equity funds were transferred to private accounts rather than retained by the firm, the amount of equity finance is underestimated.

28 In addition, smaller firms appear to pay higher interest rates than larger firms which can be interpreted as a risk premium for firms with poor credit rating.

29 This finding contrasts to earlier studies for the US which found that small firms rely less on bank credit (relative to trade credit) in periods of restrictive monetary policies (Stöß, 1996).

his sample does not include truly small, young firms. He argues that exclusive housebank relationships cannot account for the good access of small firms to bank credit because even small firms try to cooperate with more than one bank in order to avoid being too dependent. Also Fischer (1990: 142) finds that the traditional housebank relationship is declining in importance.

While these results imply that smaller firms in Germany have fairly good access to bank credit, a number of other studies indicates that external financing constraints of smaller firms are to some degree binding. Winker (1996) presents evidence from a survey of 1586 firms for the years 1980-92. Out of these firms, 6 and 27 percent, respectively, mention a lack of access to debt and equity finance as constraints for investments into new, innovative technologies. Winker shows that the probability of a firm to face a financial constraint declines with the size of the firm and with the improvement in the current business condition. Positive future expectations, in contrast, can hardly be signaled to potential lenders, which indicates that asymmetries in information are present. On an aggregated level, Winker estimates potential demand and supply functions for investment credit and calculates deviations from the actual credit volume realized on the market. He shows that credit rationing, i.e., excess demand on the German credit market, has reached up to 10 percent of the credit volume between 1974 and 1987. Both credit demand and credit supply declined in the years following 1987, causing a situation of excess supply.

A study by Audretsch and Elston (1994) similarly implies a restricted access of small firms to outside finance. The study uses the Bonn database with financial reports of 139 firms which were quoted on the stock exchange between 1965 and 1985. An investment function, which explains current investment by lagged investment, the firm's Tobin's q-ratio (market value/replacement cost), its cash flow, and its sales is estimated. A significant influence of the cash flow variable on investment would indicate that firms are constrained in their access to external finance, and that investment and financial decisions of a firm are not independent. For a first period (1968-76), no liquidity problems are found in the sample, for the 1977-85-period, in contrast, liquidity constraints are evident for small firms (relative to the sample). It may be concluded that evidence obtained from this sample of relatively large firms would only strengthen if truly small firms were considered, but this definitely cannot compensate for the lack of original data.

In summary, measured by the high share of bank loans in small firm finance and the high propensity of banks to lend to small firms even in times of monetary restraint, small and mid-sized German firms seem to have fairly good access to bank credit. At the same time, small firms are heavily using internal funds to finance their investments, and they seem to be constrained with respect to external (equity) finance. There are two institutional factors which may explain these results:

First, if firms have assets which can serve as collateral at hand, lending to small firms would occur even under asymmetric information. The relatively high propensity of small firms to use debt finance is thus likely to be due to the fact that creditor rights are relatively well protected in Germany. Although comparable data on the share of credit backed by collateral is difficult to obtain, the collateralization of loans seems to be very high in Germany (Borio, 1995: 94). In the US, only about 80 percent of all loans are backed by collateral, this share is even lower for commercial banks (63 percent). Note, however, that heavy use of collateral may run counter to an active role of banks in the restructuring of firms. In case of corporate financial distress, secured creditors may have less interest in maintaining the firm as a going concern and may rather opt for a liquidation of assets.

Second, a number of institutional factors such as the tax regime, the rigid organizational structure of publicly listed firms, and the information dissemination requirements can explain the low propensity of German firms to raise external equity finance (DBB, 1984). However, these factors are gradually declining in importance.[30] Also, it is interesting to note that the German universal banking system has played a relatively important role in financing the emergence of new innovative firms in the late 19th century.[31] Based on their evidence, it would thus be premature to conclude that a lack of access of small German firms to venture capital is mainly the result of banking regulations. Interestingly, commercial banks have in 1995 been the main providers of capital for German venture capital funds, contributing 57 percent of all sources (BVK, 1996: 110).

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30 Since 1987, for example, German limited liability companies (GmbH) have to comply with more stringent publication requirements, and the co-determination laws have been adjusted in 1995 (Schmidt, 1992; DBB, 1997).

31 See Gall et al.(1995: 30*n*) on the respective history of the Deutsche Bank.

UNITED STATES

For the US, some survey data is available which directly allows an assessment of the role of banks in the financing of small firms. Berger and Udell (1995) analyze data from the National Survey of Small Business Firms for the years 1988-89. The sample includes 863 small, non-listed firms. The authors find that small firms with a long-term relationship with banks pay lower interest rates and pledge less collateral than firms which do not have such a bank-relationship. That is, borrowers with longer banking relationships receive more favorable loan terms.[32] Also Berger, Kashyap, and Scalise (1995) confirm that lending to small borrowers is to a large extent relationship-driven. They find that large banks which mainly base their lending decision on financial analyses make few loans to small borrowers and that small banks primarily lend to small borrowers. This is also due to the fact, however, that banking regulations in the US effectively prohibit lending of small banks to larger firms.

These survey results imply a similar role of relationship-driven lending to small firms by banks in the US as compared to banks in Germany. Also aggregated data show that small firms have higher retention ratios and a higher propensity to use long-term bank credit than larger firms (Fazzari/Hubbard/Petersen, 1988). However, the share of retained earnings in total finance does not vary with firm size in the US (Table 6), i.e., the payout ratio increases with firm size.

In the US, venture capital finance has emerged since the late 1970s as a potential alternative to universal banking. Venture capital funds often provide debt and equity finance to firms, and they are involved in the management and consulting of firms (Kroszner, 1996: 92). Relative to the total amount of bank credit, however, venture capital funds are relatively small (1.22 percent in 1994) while still being greater than in Germany (0.23 percent) (BVK, 1996; Venture Economics, 1996).

In summary, the role of banks in the financing of small firms in the US and in Germany is very similar since both banking relationships and access to collateral ease access to bank credit. At the same time, German banks appear to be more willing to finance small firms than US banks, in particular in times of monetary restraint. Also, leverage of small German firms is greater than of large firms. Hence, the evidence

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32 The intensity of the banking relationship is measured by the number of years for which a firm has bought a bank line of credit from its current lender.

does not suggest that lending to small firms is impaired by universal banking. Rather, institutional factors such as creditor right protection seem to have an important impact on the willingness of banks to lend to small firms. Small German firms rather seem to be constrained with respect to their access to venture capital finance. This may explain why retained earnings are more important for small German than for US firms.

4.3. Banks and corporate governance

Banks can exert an influence on the corporate governance of firms through a number of different channels. They can hold debt and equity of firms, vote in shareholders meetings, and send representatives to the supervisory boards of firms. Because of the restricted activities of US banks in these areas, this section mainly focuses on the role of German banks in corporate governance. However, it also points out that US banks do hold equity in non-financial firms in times of financial distress.

GERMANY

In Germany, perhaps a bit contrary to the conventional wisdom, equity holdings of banks in non-financial firms are not a large asset item for banks, in particular not for all groups of banks. In mid-1996, the share of all participations of banks in other firms (including financial firms) was slightly above 3 percent of total assets (Graph 2), having continuously increased from less than 1 percent at the beginning of the 1950s. About the same amount of securities is held as portfolio investments. Taking account of the fact that about one third of the shares are participations in banks (DBB, 1997), long-term equity ownership of banks in non-financial firms thus accounts for about 2 percent of the banking system's assets. Table 9 shows that equity holdings are substantially higher for large commercial banks (over 5 percent of assets) than for other groups of banks. The large banks hold more than 50 percent of all shares.[33] Generally, banks are a relatively small buyer group on the stock

[33] One problem with the interpretation of these data arises because German accounting practices lead to an underestimation of the value of equity holdings relative to banks' assets. Because shareholdings enter with their book rather than their market value into the banks' balance sheets, market value accounting would reveal higher asset shares. The annual report of the Deutsche Bank for 1994, for example, reveals that the market

market. They held 10.3 percent of corporate equity in 1995, longer-range time series show that their share averaged 8 percent between 1960 and 1982 (Table 7; DBB, 1984:19; 1997). Banks as a group generally own less than 25 percent of the equity of a firm, and bank ownership tends to be concentrated in a single bank (Gorton/Schmid, 1996: 6).

German banks have acquired participations in non-financial firms mainly through debt-equity swaps in times of corporate financial distress and in an effort to support companies with a weak capital base (DBB, 1984, 1987, 1997). While there is little consistent empirical evidence on such events, Pohl (1986: 92) notes that many commercial banks converted debt into equity during the banking and economic crisis in Germany in the late 1920s. Surveys which focus on relatively recent acquisitions may thus not give a correct picture.[34]

Apart from their direct shareholdings, potential power accrues to German banks because they exercise proxy voting on behalf of their private customers. Through proxy votes, banks represent shareholders, who deposit their shares in the bank, on the basis of an authorization given for a maximum of 15 months. According to Cable (1985), half of the shares in Germany are deposited in banks, and banks vote on average at 36 percent of the 100 largest German companies and at 50 percent of the largest 10.[35]

Furthermore, the German non-financial firms' board structure is one of the sustaining columns of the often discussed power of German banks. In 1993, private banks held 6.3 percent of the supervisory board seats in Germany's 100 biggest companies (Table 8). These board mandates have been build up already in the early 20th century (Pohl, 1986). However, the presence of large shareholders as well as the presence of banks on most supervisory board meetings is diminishing. Bankers have reduced their role on the supervisory boards by accepting fewer mandates. According

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value of the shares and participations held by the bank is more than four times greater than the book value of these assets (Deutsche Bank, 1995).

34 The German banking association, for example, published the results of a survey of the 10 largest private banks in Germany. This survey revealed that between 1976 and 1986 in only 1 out of 20 cases was debt swapped into equity, and in 5 cases were firms with a weak capital base supported (Cammann/Arnold, 1987: 122).

35 The restriction that prevents a single person or institution from having more than 5-10 percent of the votes at the general meetings does not apply to proxy voting by banks (Gorton/ Schmid 1996: 9).

to a study of the Monopolkommission (1978: 301*n*), domestic banks held, on average, 20 percent of total supervisory board seats in 1974. In 1986, banks representatives accounted for about 10 percent of the total supervisory board membership of 75 of the 92 largest industrial companies with a supervisory board (Böhm, 1992: 231*n*). This trend has continued.

The discussion of Section 3 has shown that universal banks can be expected to perform a corporate governance role in non-financial firms. However, empirical tests of this hypothesis are inherently difficult to perform. If the market for corporate control is in equilibrium, differences in the performance of firms cannot be traced back to differences in ownership structure because market mechanisms ensure that optimal ownership structures evolve (Gorton/Schmid, 1996).

Analyses based on micro-data have been conducted only recently. Gorton and Schmid study the effects of bank equity ownership, proxy votes, and block holdings of banks on the profitability of firms. The authors test three hypotheses: (i) coincidence of interest (relationship between equity holdings and performance of firms is upward sloping), (ii) opposed interests (relationship is downward sloping), (iii) insider hypothesis (relationship is first downward and then upward sloping; banks behave as entrenched insiders over the range where performance declines). Two cross-sections of large German firms for two points in time, 1974 (88 observations) and 1985 (57 observations), are studied. The results for the 1974-sample indicate no conflicts of interest. The performance of firms increases as a function of how much equity banks own while it is not related to proxy voting or to blockholdings of shares. Hence, banks seem to play a positive role and to be better able than other blockholders to improve performance. The results change for the 1985-sample. In this sample, performance is unrelated to equity holdings and to proxy voting of banks but it is related to blockholdings.

The results of Schmid and Gorton seem to support the view that a potential positive impact of bank ownership on corporate governance was merely achieved in protected financial markets and could not be sustained through periods of increased (external) competition. This would imply that markets in Germany now provide superior substitute mechanisms of corporate control. A recent analysis of Schmid (1996) indicates that this conclusion may be premature. He tests three hypotheses: (i) equity participations of banks have a non-negative impact on firm profitability, (ii) the

size and structure of equity participations influence the distribution of profits on debt and equity holders, and (iii) equity participations of banks have a negative impact on firm profitability. Schmid's sample consists of data on 62 German joint stock companies (non-financial firms) for the year 1990 which had a participation of at least one commercial bank. The hypothesis that banks have a negative impact on performance is not supported.[36] Banks seem to receive a remuneration for their corporate control functions through the return on debt relative to capital. Schmid concludes that restricting share participation of banks in non-financial firms may reduce the banks' interest to engage in external control and prevent the evolution of efficient ownership structures.

A sub-sample of 91 firms from the Bonn Database has been used by Chirinko and Elston (1996a, 1996b) to determine the impact of ownership structure on the profitability of firms. Ownership is considered to be concentrated if a single stockholder owns more than 50 percent of the shares *or* if two or three stockholders own more than 75 percent. Financial institutions are assumed to have a substantial influence on firms if one bank (or insurance company) holds more than 50 percent of the shares *or* if a financial institution is the only shareholder with an equity stake exceeding 25 percent. The authors find little evidence for a substantial positive influence of banks on the firms' profitability, but also no evidence of a negative influence. Bank-influenced firms do not hold more bank debt, nor do they enjoy lower finance costs. There is thus no evidence for a certification effect of bank ownership. Since, in equilibrium, profitability of firms should not be affected by ownership structures, these findings suggest that bank ownership has an impact on corporate control, and serves as a substitute for concentrated non-bank ownership.[37]

Elston (1996) furthermore analyzes whether bank involvement, measured by the ownership participation of banks, reduces the sensitivity of firms' investment decisions to liquidity conditions. She asks whether cash flow is a significant determinant of investment and, in addition, whether the significance of this variable differs ac-

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36 More specifically, the hypothesis of a non-negative impact of banks' shareholdings on the return of capital cannot be rejected while the hypothesis of a negative impact cannot be confirmed.

37 Because banks as a group generally own less than 25 percent of the equity of a firm, this assumption is fairly restrictive.

cording to the bank relationship of firms. The analysis is based on a sample of 250 firms of the Bonn database. In a first period (1968-1972) studied, cash flow was not a significant determinant of investment; only lagged investment had a significant impact. The results are the same for firms owned versus firms not owned by banks. In the second period (1973-1984), in contrast, cash flow had a significant impact on investment. Firms which were not bank-dependent faced liquidity constraints while this was not the case for firms which were partly owned by banks.

While the above studies provide evidence for a non-negative impact of bank ownership on firm performance, it has also been claimed that bank ownership has a significantly negative impact. Perlitz and Seger (1994), for example, compare the means of different financial variables in firms with a high potential of bank influence versus firms with a low potential of bank influence. Potential bank influence is a composite measure of proxy voting, board membership of bankers, and equity holdings. The authors find a great potential for bank influence in a number of firms, and a negative correlation between this variable and performance. However, their empirical approach is subject to a number of flaws. This is mainly because the negative correlation may be due to other factors (industry characteristic, for example) which have not been controlled for. Also, the impact of individual variables describing bank influence cannot be isolated.

UNITED STATES

In the US, corporate governance functions are mainly performed through markets or through pension funds which are important investors on the stock market. The number of takeovers in the US is high[38] while, in Germany, there have been only four takeovers in the past 50 years.[39] Hence, a comprehensive assessment of the efficiency of corporate governance mechanisms would require an analysis of takeovers and pension fund activities. In this section, we rather focus on the equity holdings of US banks.

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38 Martin and McConnell (1991:671*n*) investigate 253 successful takeovers for the period from 1958 to 1984; they qualify a takeover as successful if there was a management turnover. For the takeover wave of the 1980s, Shleifer and Vishny (1990: 745*n*) report that between 1984 and 1986 there were no less than 62 hostile takeover contests.

39 Interestingly, three of these took place within the last eight years.

In the United States, just as the conventional wisdom would suggest, equity holdings of commercial banks are almost negligible. They accounted for less than 0.5 percent of banks' total assets at the beginning of the 1990s (Graph 2) and are thus – in view of the large size of the stock market – de facto irrelevant with regard to the total volume of enterprise stock: Commercial banks held only 0.2 percent of corporate equity in 1995 (Table 7). The impact of the Glass-Steagall Act on equity holdings is clearly revealed by the data. After the implementation of the Act, equity holdings were gradually reduced from more than 1 percent of total assets in 1934 to the low level that they have retained since the mid 1940s.

Behind these aggregated figures, it is often overlooked that also banks in the US can hold equity in non-financial firms. One exception from the general rule of the Glass-Steagall Act that prohibits equity holdings are loan workout situations (James, 1996). If bank debt has been rescheduled or if it has not been serviced in the past, commercial banks can convert debt into equity, and no limit applies to the share of a firm's capital that a bank can hold. Until 1980, banks could hold such equity stakes for a maximum period of five years; this period has been extended to ten years, and some state laws are even less restrictive. James analyzes 139 debt restructuring cases which have taken place between 1981 and 1991. He finds that in 32 percent of the cases, banks swapped debt into equity, and that they forgave on average 46 percent of the principal of their loans.[40] Banks on average became the largest stockholders of the restructured firms, and they held the equity over several years. James furthermore provides evidence that banks are more likely to swap debt into equity in firms which have positive growth prospects, measured by the value of their market-to-book value of assets. In addition, while the earnings of these firms tended to lie below the average prior to debt restructuring, they were above average after two years. One possible explanation is that bank ownership has a positive impact on performance through, for example, improved monitoring.

In summary, the empirical evidence has shown (i) that in Germany shareholdings of large commercial banks – not necessarily of small and mid-sized banks – in non-financial firms are higher than in the US, and (ii) that both in Germany and in the US

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40 An important variable affecting the incentives of banks to undertake debt-equity-swaps is the amount of public debt of a firm outstanding. If public bondholders did not restructure their claims, banks did not act unilaterally.

banks make use of the option to swap debt into equity in firms which are under financial distress. The empirical evidence furthermore gives weak support to the hypothesis that equity ownership of banks has at least a non-negative impact of firms performance. Yet, more micro-economic evidence is certainly needed in order to identify the specific channels through which banks exert an (ownership) influence of firms. At the same time, theoretical considerations and the German evidence have shown that periods of financial distress are not the only cases in which banks may wish to hold equity. Even under "normal" conditions, an optimal structure of corporate control is characterized by a certain amount of banks' shareholdings. Current US legislation may thus prevent the evolution of an optimal governance structure, thus biasing the market for corporate control towards costly takeover mechanisms. Liberalizing equity ownership is unlikely to lead to massive investment of banks in enterprise shares, because, as the German data show, banks have a propensity to economize on their shareholdings.

4.4. Activities and Profitability of Commercial Banks

The different scope of activities of German and US banks should ultimately be reflected in differences in their balance sheet and income structure. Yet, although there are some pronounced differences in the structure of the balance sheets, we can also observe some similarities and converging trends between 1980 and 1992.[41]

The structure of commercial banks' assets is surprisingly similar when considering loans to customers (Table 11). These accounted for a relatively constant share of about 60 percent of assets. Also, the structure of bank loans by recipient was almost identical in the two economies with roughly equal shares of households (53 percent) and businesses (47 percent) in total credit in 1993 (Borio, 1995: 70). The major difference in the asset structure of banks is the much greater holdings of German banks of interbank deposits and the greater share of securities for US banks. These differences persisted over time, although recent changes point into the same direc-

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41 The year 1992 was chosen because German data since 1993 include East German banks.

tion. Banks in both economies reduced their holdings of cash and central bank balances, possibly as a result of improved payment systems techniques.

The major difference on the liabilities' side of the banks' balance sheet is, again, the greater reliance of German banks on interbank deposits. Also, bond finance is more important for German than for US banks. Consequently, US banks finance themselves to a much greater degree through non-bank deposits and through equity. Despite differences in the stocks, we again observe similar adjustments trends. Equity and reserves, in particular, have become more important over time, possibly in response to increased banking risks.

With regard to their income structure, German and US commercial banks earned about one third of their income from non-interest activities (Table 10). While this share has remained relatively constant over time in Germany (about 30 percent of gross income), US commercial banks increased their non-interest income from 22.1 to 34.5 percent during the decade under review. To a substantial degree, this increase in non-interest income can be interpreted as a reflection of banks move to off-balance sheet activities (Berger/Kashyap/Scalise, 1995: 68). Non-interest income includes fees from issuing counterparty guarantees and derivative instruments. Boyd and Gertler (1995) even argue that the provision of back-up lines (fee-based) provides banks with approximately the same income as direct lending.

Apart from similar structures of gross income, the profitability of German and US banks differs quite substantially. Both in 1980 and in 1992 did US banks achieve a return on assets (ROA) about four times greater than that of German banks.[42] Because of the greater capitalization of US banks, the gap in the return on equity (ROE) has been less pronounced. US banks have thus employed their assets more efficiently and have achieved a better profit ratio, i.e., a greater net after tax income relative to gross income. Certainly, this finding warrants closer examination. In particular, banks of similar size and structure should be compared.

While these cross-country comparisons of income statements are potentially biased by differences in accounting standards, the development of the ratios over time in a particular country should not be subject to such a distortion. We again see similari-

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42 Under the assumption that German assets are at least partly undervalued, the true difference is even larger.

ties between the two countries. Both in the US and in Germany have the profit ratios of banks declined by several percentage points. Accordingly, gross income margins and returns on assets declined, although this loss in profitability has been less pronounced for German banks. Because of the increased capitalization of banks in both economies, ROEs declined as well. Overall, these findings show that the globalization of financial markets affects the profitability of banks everywhere and that the responses of banks follow similar patterns.

5. CONVERGENCE OF THE SYSTEMS: IMPLICATIONS FOR BANKING REGULATIONS

The globalization of financial services and the deregulation of financial markets have called into attention the role of banks for economic development and growth. Commercial banks in Germany and in the US are usually thought to play a fundamentally different role. By analyzing the structure of financial markets, bank-firm relations, and financial statements of banks, we have shown that the differences are not as big as they appear at first sight, that some of them have been decreasing over the past years, and that many of them are due to differences in the overall regulatory structures of the economies.

Similarities between the German and the US financial system were mainly found with regard to the great reliance of firms on internal sources of finance and to the important role of commercial banks as intermediaries of external finance. Access to bank credit is of particular importance for small firms in both economies. Interestingly, despite the general prohibition of industrial shareholdings of banks in the US, banks swap debt into equity in times of corporate financial distress in both economies.

Obviously, the major differences between the two economies is the greater role of German banks in the corporate governance of non-financial firms which is largely restricted by law for US banks. In addition, a greater stock market capitalization in the US and a lower leverage of US firms set the two economies apart. There are also differences with regard to the financing of small firms. These firms mainly use bank debt as external sources of finance in Germany. In the US, in contrast, they appear to have also relatively good access to external equity finance.

Our analysis indicates that the perceived differences result basically from different regulatory environments which, in turn, exert a strong influence on household and firm preferences. Tax regimes, pension systems, and financial market regulations feature prominently among these factors. Banking regulations are thus not the only factor. There is, at the same time, a trend in both systems to assign market forces a greater role. This trend towards deregulation consists in Germany in opening the securities market, and in the US in relaxing restrictions for commercial banks to own shares of non-financial firms and to engage in additional activities. Both economies are likely to benefit from deregulating and converging to a system driven more by market forces. This also implies that emerging and transition economies should notice that not only banking regulations but rather – and perhaps most importantly – related institutional reforms will shape the structure of their financial systems. The relevant choice is not been universal and separated banking. Rather, institutional reform requires the implementation of a framework which allows for the utilization of the positive features of either system. Convergence implies that bank- and market-based financial structures are not mutually exclusive but rather complement each other.

The findings of this paper shed some light on the question how path dependent the evolution of financial systems may be. If path dependence is a real phenomenon, initial conditions – which may arise randomly – would have a significant impact on the evolution of financial structures over time. Most importantly, the removal of existing regulatory or institutional differences would not lead to a convergence of financial structures. If path dependence, in contrast, is not very strong, similar institutional structures would eventually lead to convergence. The in many respects very similar role of banks in Germany and in the US and the observable trend towards a convergence of financial structures supports the view that path dependence is not too strong. While it is difficult to answer the question whether preferences determine regulations, or vice versa, we are inclined to believe that the reverse causality holds. Changing regulations will thus ultimately shape preferences, and this will lead to convergence.

Finally, the findings of this paper suggest a number of areas for future research. For Europe, the likely evolution of financial systems and banking structures after the introduction of a single European currency should be studied. Experiences with the

recent mergers and acquisitions in the US banking industry and with the evolution of financial centers can provide useful insights. Moreover, the similarities between venture capital funds and universal banking structures warrant deeper investigation. As regards the future of the banking industry, the theoretical rationale behind off-balance activities of banks and the empirical relevance of this type of business should be explored.

TABLES AND GRAPHS

TABLE 1 — BANKING REGULATIONS - BRANCHING RESTRICTIONS

	GERMANY	UNITED STATES
Geographic	None for commercial banks; restrictions do apply for some savings and specialized banks.	Interstate branching allowed only to the extent permitted by state law (Mc. Fadden Act): Interstate branching by national banks is generally not permitted. However, bank holding companies may own bank subsidiaries in more than one state if expressly permitted by state law (Douglas Amendment).
Regulatory	Notification to the banking supervision (Bundesaufsichtsamt für das Kreditwesen) and the Bundesbank required.	Authorization by federal or state agencies required.
Scope of permissible securities activities	Unrestricted for commercial banks within the general solvency and liquidity requirements.	A commercial bank may underwrite and deal in government securities and deal in other debt and equity securities provided that (1) the activities are conducted in a bank holding company subsidiary; (2) the revenues of such activities do not exceed 25 percent - before 10 percent- of the total revenues of the subsidiary; and (3) bank affiliates are insulated by appropriated fire walls.

Source: Saunders and Walter (1994: 237-248).

TABLE 2 — STOCK MARKET DEVELOPMENT INDICATORS, 1986-1993 (AVERAGES).

	GERMANY	US
Market capitalization (market value of stocks / GDP) [%]	24	64
Total value of traded shares / GDP [%]	35	41
Number of listed companies	551	7087
Turnover (total value traded / market capitalization) [%]	147	65
Volatility (12-months rolling standard deviation estimate based on market returns)	0.04	0.03
Market concentration (share of market capitalization held by the 10 largest stocks) [%]	41	14

Source: Demirgüç-Kunt/Levine (1995: 33-34).

TABLE 3 — GROSS BOND ISSUERS IN THE US AND IN GERMANY, 1995.

	GERMANY	US
	(% of total market)	
Central government	20.9	45.7
State and local government	3.2	11.9
Financial institutions	75.7	28.0
Domestic corporations	0.2	12.7
Foreign entities	–	1.7
Total	100.0	100.0

Source: OECD (1996c).

TABLE 4 — LEGAL AND REGULATORY CONSTRAINTS ON NON-FINANCIAL FIRM'S ACCESS TO NON-BANK FINANCE IN GERMANY.

INSTRUMENT	REGULATORY RESTRICTIONS
Commercial papers and domestic bonds	Issuance discouraged until 1992 by issue authorisation procedure and securities transfer taxes.
Euro-Bonds.	Issuance abroad required prior notification of the authorities and was subject to maturity restrictions until 1989. Issuance of foreign currency bonds prohibited until 1990.
Equity	New share issues must be offered to existing shareholders first. 1 percent corporation tax on all equity issues until 1992. Secondary trading in equities subject to securities transfer tax until 1992, ranking from 0.1 to 0.25 percent. Annual net assets tax of 1 percent on corporate net assets, payable irrespective of net income position.

Source: Prowse (1994: 26).

TABLE 5 — BALANCE SHEET STRUCTURE OF NON-FINANCIAL FIRMS IN GERMANY AND IN THE US, 1980 AND 1994.

	GERMANY		US	
	1980	1994	1980	1994
	[% of total assets]		[% of total assets]	
ASSETS				
Non-financial assets	55.2	45.0	73.6	64.6
Short-term financial assets	34.0	38.1	17.1	25.1
Central government securities			0.4	1.3
Long-term financial assets	7.8	16.4	9.0	9.0
Other assets	3.0	0.4		
LIABILITIES AND EQUITY				
Equity	34.3	39.7	68.2	48.4
Share capital	14.1	12.2		
Reserves	6.7	5.6		
Provisions	13.4	21.9		
Accumulated depreciation reserves	5.4			
SHORT TERM LIABILITIES	42.8	44.7	16.9	24.8
Short-term bills and bonds			1.0	1.9
Short-term borrowed funds			7.1	12.5
Loans from banks	9.9*	9.9*	5.2	7.0
Others			1.9	5.5
Trade credits received			7.8	9.9
Other accounts payable			1.0	0.6
LONG TERM LIABILITIES	17.2	15.2	14.9	26.7
Long-term bonds			9.2	16.9
Long-term borrowed funds			5.7	9.8
Loans from banks	10.9*	9.5*		
Others	6.3	5.7		
Other liabilities	0.4	0.4		
Memorandum:				
DEBT / EQUITY RATIOS [%]	175	151	47	107

Source: OECD (1996b). * DBB (1993: 22-23).

Note: Due to rounding, the figures may not add up to the total.

TABLE 6 — SOURCES OF FINANCIAL FUNDS IN US MANUFACTURING FIRMS, 1970-84.

	Bank debt		Other long-term debt	Retained earnings	Long-term bank debt	Average retention ratio
	Short-term	Long-term				
	(% of total sources of funds)				(% of long-term debt)	(%)
All firms	0.6	8.4	19.9	71.1	29.6	0.60
Firms ranked by asset size (Mill. $)						
< 10	5.1	12.8	6.2	75.9	67.3	0.79
10-50	5.9	17.4	6.9	69.8	71.6	0.76
50-100	3.1	12.9	5.3	78.7	71.0	0.68
100-250	-0.2	13.3	12.0	74.9	52.4	0.63
250-1000	-2.3	10.6	15.4	76.3	40.8	0.56
> 1000	-0.6	4.8	27.9	67.9	14.7	0.52

Source: Fazzari/Hubbard/Petersen (1988).

TABLE 7 — DISTRIBUTION OF OUTSTANDING CORPORATE EQUITY AMONG DIFFERENT CATEGORIES OF SHAREHOLDERS, 1995.

	GERMANY	UNITED STATES
	(percent of total shareholdings)	
Financial sector	30.3	44.5
Banks	10.3	0.2
Insurance companies and pension fund	12.4	31.3
Other financial institutions	7.6	13.0
Non-financial sector	61.0	51.4
Public authorities	4.3	
Private households	14.6	36.4
Enterprises	42.1	15.0

Source: DBB (1997).

TABLE 8 — SUPERVISORY BOARD POSTS HELD IN GERMANY'S 100 BIGGEST COMPANIES, 1993.

	Number of mandates	Percent of total
Private banks	99	6.3
Other banks and insurance companies	53	3.4
Industry and other companies	427	27.4
Politicians and public servants	67	4.3
Other owner representatives	155	10.0
External trade unionists	211	13.5
Other employee representatives	549	35.1
Total	1561	100.0

Source: Bundesverband deutscher Banken (1995).

TABLE 9 — AVERAGE SHARE OF EQUITY HOLDINGS GERMAN BANKS, 1979-1994.

	1979-1985	1989-1990	1991-1994
		(% of total assets)	
All banks	1.5	2.0	2.8
Co-operative banks	0.5	0.7	1.0
Regional institutions of co-operative banks	2.3	3.1	3.6
Commercial banks	3.0	3.7	4.4
Large commercial banks	4.0	5.6	6.2
Regional giro institutions	1.0	1.2	1.8
Savings banks	0.6	0.9	2.3

Source: OECD (1996a).

TABLE 10 — INCOME STATEMENT ANALYSIS FOR COMMERCIAL BANKS IN THE US AND IN GERMANY, 1980 AND 1992.

	OPERATING ASSET RATIOS (% of balance sheet total)			
	US		GERMANY	
	1980	1992	1980	1992
Interest income	9.9	7.4	8.5	8.4
Interest expenses	6.8	3.5	6.6	6.2
Net interest income	3.1	3.8	1.9	2.2
Non-interest income (net)	0.9	2.0	0.8	1.0
Gross income	4.0	5.9	2.7	3.2
Operating expenses	2.6	3.8	2.0	2.0
Net income	1.3	2.1	0.7	1.2
Provisions (net)	0.3	0.8	0.2	0.7
Profit before tax	1.1	1.3	0.4	0.5
Income tax	0.3	0.4	0.2	0.3
Profit after tax (ROA)	0.8	0.9	0.2	0.2
	OPERATING INCOME RATIOS (% of gross income)			
	US		GERMANY	
	1980	1992	1980	1992
Interest income	249.2	125.3	313.7	261.7
Interest expenses	171.3	59.8	244.2	192.5
Net interest income	77.9	65.5	69.6	69.2
Non-interest income (net)	22.1	34.5	30.4	30.8
Gross income	100.0	100.0	100.0	100.0
Operating expenses	66.5	64.3	74.8	63.7
Net income	33.5	35.7	25.2	36.3
Provisions (net)	6.4	12.8	8.8	21.6
Profit before tax	27.1	22.9	16.4	14.8
Income tax	7.2	7.1	7.9	8.0
Profit after tax	19.9	15.7	8.5	6.8
	OPERATING EQUITY RATIOS (% of total equity)			
	US		GERMANY	
	1980	1992	1980	1992
Interest income	162.6	96.9	204.7	152.3
Interest expenses	111.7	46.3	159.3	112.0
Net interest income	50.8	50.7	45.4	40.3
Non-interest income (net)	14.4	26.7	19.9	17.9
Gross income	65.2	77.3	65.2	58.2
Operating expenses	43.4	49.8	48.8	37.0
Net income	21.9	27.6	16.4	21.1
Provisions (net)	4.2	9.9	5.7	12.5
Profit before tax	17.7	17.7	10.7	8.6
Income tax	4.7	5.5	5.2	4.6
Profit after tax (ROE)	13.0	12.2	5.5	4.0

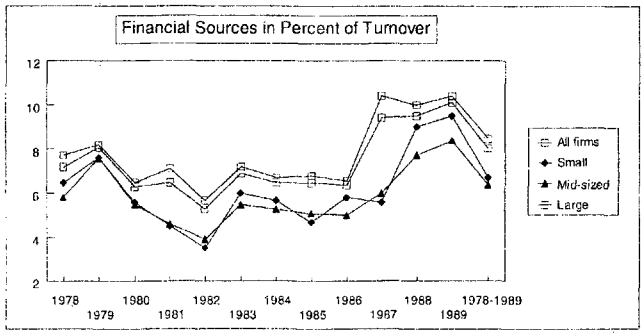
Source: OECD (1996a). Balance sheet totals are averages based on twelve end-month data. Because from 1993 onwards, German data include Eastern German banks, the year 1992 was used as the relevant basis for the comparison.

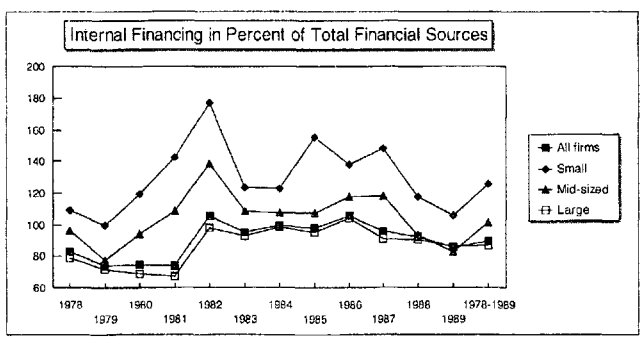
TABLE 11 — BALANCE SHEET STRUCTURE OF COMMERCIAL BANKS, 1980 AND 1992.

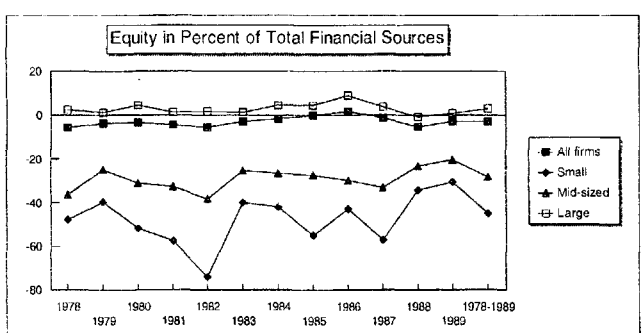
	GERMANY		US	
	1980	1992	1980	1992
	(% of total balance sheet)			
ASSETS				
Cash and balance with central bank	4.9	2.5	7.2	4.4
Interbank deposits	25.2	22.1	10.5	3.5
Loans	57.9	60.0	58.0	61.0
Securities	9.8	13.2	18.0	24.3
Other assets	2.3	2.2	6.2	6.9
LIABILITIES				
Capital and reserves	4.0	5.3	5.8	7.5
Borrowing from central bank	3.6	3.6	...	...
Interbank deposits	31.6	26.6	11.7	3.6
Non-bank deposits	49.2	50.2	68.1	73.4
Bonds	8.2	9.1	0.5	1.0
Other liabilities	3.4	5.3	13.9	14.5

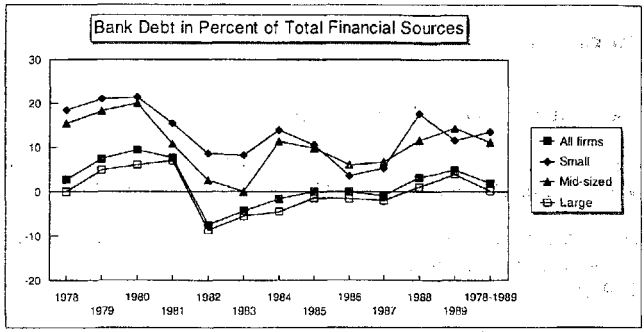
Source: OECD 1996(a)

GRAPH 1 — FINANCIAL STRUCTURE OF GERMAN FIRMS (FLOW DATA), 1978-1989.



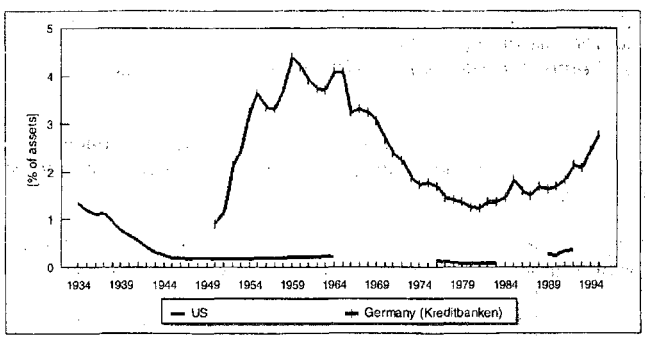






Source: DBB (1992).

GRAPH 2 — EQUITY HOLDINGS OF COMMERCIAL BANKS, 1934-1994.



Source: FDIC (1993), Deutsche Bundesbank (Bankenstatistik, various issues).

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