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CORPORATE-FINANCE BENEFITS FROM UNIVERSAL BANKING: GERMANY AND THE UNITED STATES, 1870-1914

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ABSTRACT

Limitations on bank consolidation and branching in the United States at an early date effectively limited the scope of commercial banks and their involvement in financing large-scale industry, and increased information and transaction costs of issuing securities. In contrast, German industry was financed by large-scale universal banks who maintained long-term relationships with firms, involving ongoing monitoring and disciplining of management, and underwriting. Low costs of German industrial finance are reflected in lower investment banking spreads on securities issues and a higher propensity to issue equity relative to the United States.

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I. Introduction

Questions about the desirability of alternative regulatory regimes often are addressed best by making comparisons across examples of those regulatory regimes. To do so we need to focus more on comparisons within U.S. history and on cross-country comparisons currently and historically. In this spirit I will address the question of the costs of American prohibitions on universal banking with an international, historical comparison of the German and American systems for financing industrial investment from 1870 to 1914.

This was the period of the great "second" industrial revolution in which large-scale manufacturing of new products by new industries ushered in the modern age of rapid technological progress and hierarchical corporate organization. Both countries invested heavily in the new techniques for producing chemicals, steel, railroads, and electrical machinery, and both financial systems were called upon to finance the production and distribution of these new products with unprecedentedly large amounts of outside capital. Despite these similarities, the financial systems of the two countries were completely different. In this paper, I will describe how differences in banking regulation which prevented the development of universal banking in the United States produced these differences, argue that prohibitions on universal banking produced higher costs of corporate finance and governance in the United States, and relate these findings to the current policy debates in the United States over the optimal scale and scope of banking.

II. Pitfalls of Within-Regime Measures of Scale and Scope Economies

The U.S. policy debate over scope and scale in banking largely has been carried on within

the confines of empirical studies of the current U.S. banking system. Studies of economies of scale compare the cost efficiency of small and large banks within the United States, and typically find limited benefits to increased bank size. These comparisons have been criticized for not adequately distinguishing different activities performed by banks of different sizes, and several studies have found that activity-specific economies of scale can be much larger than scale economies measured by overall bank comparisons (Toevs, 1992). Recent studies of mergers have also supported the notion that, at least for large banks, consolidation can be very profitable (Cornett and Tehranian, 1992). Studies of economies of scope try to measure potential or actual increases in the profitability of intermediaries from combining different activities, and usually view these advantages as the result of technological economies of scope or economies of diversification of intermediary risk. The findings in this literature have been mixed (see Calomiris, 1992 and 1993, for a more detailed discussion).

Despite some limited progress in these literatures, both face a fundamental hurdle. The counterfactual policy question they seek to address -- would further relaxation of limits on bank scope and scale be desirable? -- cannot adequately be addressed by comparisons within the current regulatory regime. The way banks combine activities and locations to become large in the United States is very constrained compared to the way they might become large in the absence of branching and activity restrictions. Thus one may be learning very little about the cost function of large banking in the absence of branching and activity restrictions by looking at the cost function of current large banks. Furthermore, the problems of regulatory constraints for answering such counterfactual questions compound if economies of scale and scope are related. For example, as I will argue, it may be that economies of scope in combining lending,

trust management, and underwriting depend crucially on the ability of banks to become large by operating a wide-ranging branching network. Thus the modest economies of scale and scope that have been measured by current within-regime comparisons in the United States may underestimate substantially the benefits of regulatory change.

Another problem with the studies of scope economies in banking has been their focus on the effects on intermediaries' profits and opportunities for diversification. It may be, however, that the chief benefit of allowing banks to combine deposit taking, lending, underwriting, and trust management in the same intermediary would not accrue to the banks, but rather to their customers. Recent arguments from corporate finance theory and empirical studies of the role of banks in corporate finance suggest that universal banking can reduce substantially the costs of corporate finance and governance. In this paper, I will focus on these arguments from the corporate finance literature in light of the historical differences between the banking and financial systems of Germany and the United States prior to World War I.

III. Banks as Long-Term, "Junior Insiders"; Germany and Japan vs. the United States

Recent comparisons of the American, German, and Japanese financial systems have arisen largely out of a desire to answer counterfactual questions about the desirability of different financial systems and regulatory regimes. From the perspective of the literature on corporate finance, the three countries' financial systems provide examples of different financing mechanisms, which differ according to the nature of financial contracts that predominate, and the role of banks in corporate finance. Of course, there are a lot of differences across these three countries, but it is useful to focus on two related differences that distinguish the United

States from the other two. First, in Japan and Germany, banks are long-term insiders of the firm. The bank and its client have a long-term, "cradle-to-grave" relationship. Second, banks in Japan and Germany typically hold and/or control large amounts of junior claims on firms, and exert direct corporate governance over firm management. Of course, these two phenomena are related. If a bank is a large equity holder, obviously it benefits by becoming part of the governance team for the firm.

In the United States, banks are not directly involved in governing firms, and bank claims on firms tend to be the most senior claims in the economy. U.S. banks achieve seniority in four ways. First, banks secure their debt with collateral. Second, banks keep the maturity of the loan short relative to that of bonds or private placements, which effectively makes their loans senior, since they have rollover options other creditors do not have. Third, banks write many detailed loan covenants restricting the actions of borrowers. Violation of any of these covenants provides banks the option to "call" the loan, thus allowing banks to claim early payment of a loan to a firm they see as potentially distressed. Fourth, when banks accelerate ("call") loans, they can use the right of "offset" to recover their loans -- that is, seize the customer's deposit funds immediately. This can be especially useful for avoiding lengthy bankruptcy disputes.

Clearly, these are two very different corporate finance and control arrangements by banks. In the German/Japanese case, banks who deal with firms exert direct control and expose themselves to larger potential loss. In the United States, consistent with their lack of control over management, banks have much less potential exposure to the consequences of managerial decisions. There are several potential benefits from the German/Japanese approach (the long-term, "junior insider" bank-firm relationship). First, delegating an insider bank as the primary

monitor and governor of corporate behavior can reduce costs associated with the "asset-substitution" problem, or alternatively, the "free cash flow" problem. The former refers to firms' incentives to transfer wealth from creditors to stockholders by adding risk after negotiating debt contracts (Jensen and Meckling, 1976). The latter refers to management's incentives to transfer resources from stockholders to managers when stockholders cannot directly control management's behavior. Banks with the knowledge and incentive to govern firms appopriately will make sure that management's investment decisions are aligned with the interest of the firm's claimants. Banks that hold both debt and equity in the firm will have incentive to protect both types of claimants by monitoring and controlling the investment and risk-taking behavior of management. Empirical evidence from studies of Germany, Japan, and the United States confirms that the discipline of a powerful "delegated monitor" with appropriate incentives can help firms reduce their costs of external finance, and their reliance on internally generated funds to finance investment (Hoshi, Kashyap, and Scharfstein, 1990a, DeLong, 1991, Ramirez, 1993).

Second, the "junior insider" long-term banking relationship increases the "signal value" of bank decisions about firm finances. If a bank is a firm insider, and if the bank is willing to hold junior claims on the firm, increased bank financing sends a strong message to other investors of the firm's creditworthiness because the bank is known to be privy to special information about the firm's prospects. There is a growing body of empirical evidence that suggests that outside holders of equity and debt respond to bank decisions when pricing firms' claims, and that that response is larger when banks hold relatively junior claims (James, 1987, Lummer and McConnell, 1989, Brown, James, and Mooradian, 1991).

Third, as Sheard (1985) and Hoshi, Kashyap, and Scharfstein (1990b) have stressed, a large benefit of this sort of insider relationship is reductions in the costs of corporate distress if and when borrowers encounter trouble. In Japan, these authors show, main banking relationships help to resolve corporate distress at very low cost, partly because banks will be more willing and able to help firms absorb some of the adverse shock, which is a direct result of their status as insiders and their holdings of junior claims. Furthermore, the main and universal banking systems concentrate ownership of claims on the firm in fewer hands, which greatly facilitates renegotiation (Gilson, John, and Lang, 1990).

Fourth, there is an "infant-industry" argument for long-term relationships between "junior insider" banks and firms which has been suggested by Mayer (1988). In the early stages of the investing firm's life cycle, banks spend substantial resources "seasoning" firms (collecting information, and establishing and enforcing behavioral guidelines). The costs of designing and enforcing covenants are often front-loaded within the firm-bank relationship. That is, initial costs to the bank are large compared to subsequent costs. At the same time, an investing firm's ability to pay for these costs is back-loaded. The shadow cost to the firm of paying for monitoring by the bank falls over time as it matures and becomes more seasoned, and as its investment needs fall relative to its internally generated earnings. Therefore, one of the benefits of establishing from the outset a long-term, credible relationship between a firm and its banker is that the bank can be reimbursed for front-loaded monitoring costs with back-loaded fees. One way this can be accomplished is for banks to charge less than marginal cost for their services in the early stage of the relationship, and more than marginal cost in the later stage. The advantage of this arrangement is that it increases the number of viable investment projects by

young, unseasoned firms. In the absence of credible long-term relationships, banks may not be able to recoup their initial costs, and may be unwilling to finance "infants." The "junior insider" relationship can help to enforce beneficial long-term contracting by increasing bank control over the firm. Furthermore, according to the "pecking-order" theory of corporate finance, corporations' reliance on outside placement of debt and equity in securities markets should increase over time. Allowing banks to engage in both lending and underwriting thus further encourages long-term relationships between firms and their banks and the back-loading of firm payments for monitoring costs.

IV. Bank Fragmentation and the Peculiar History of American Banking

These four advantages of long-term, "junior insider" banking will not be available in banking systems like that of the United States that explicitly have restricted such a relationship between banks and firms. The obvious restrictions are the prohibitions of centralized bank control over boards of directors (the Clayton Act of 1914, which resulted from the "money-trust" allegations of the Pujo Hearings of 1912-1913), and the prohibitions on equity holding by banks or bank holding companies. Equity holding by banks themselves was explicitly viewed as ultra vires in state and national bank charters, but banks managed to hold and underwrite equity through investment banking affiliates, which became important in securities markets in the 1920s. Bank holding company involvement in equity holding and underwriting was prohibited by the Glass-Steagall Banking Act of 1933 (following the Pecora hearings of 1932).

The less obvious restrictions on firm-bank relationships, which I will focus on in this paper, were the restrictions implied by limitations on branching and consolidation. These limitations

date from the origins of American banking, but were not an important bone of contention until the 1880s. At that time the advantages to banks of branching became apparent, and special-interests opposed to branching became organized (Calomiris, 1992).

The advantages of branching arose from the increasing scale, scope, and geographic range of industrial enterprises during the second industrial revolution. These changes encouraged banks to match the attributes of their customers. Larger industrial borrowers operating over widespread geographic areas required larger-sized loans, which (for reasons of the desirability of diversification) was only feasible for large banks. For banks to become large, they had to raise funds from deposits, which required a branching network. Second, a branching network would have allowed bankers to better monitor the actions of their customers, who operated nationwide production and distribution networks. Third, for banks (or their affiliates) to be able to underwrite junior securities, and place them at a low cost in trust accounts, a nationwide branching network was essential. Without a network of branches, banks could neither make direct loans to customers, nor underwrite and place securities of customers at low cost. Finally, placing securities in trust accounts facilitated bank control over firms through bank control of proxies. These costs of branching restrictions were compounded by their effect in limiting the formation of long-term relationships between firms and banks. From the standpoint of Mayer's (1988) "infant-industry" argument, banks' inability to underwrite, hold, and control junior securities (the preferred financing arrangement of the late stage of the firm's life cycle) reduced the feasibility of developing effective long-term relationships with unseasoned firms.

The successful prohibition of branching, within states as well as across them, implied a mismatch between the scale and scope of firms and those of their bankers. Prior to direct

restrictions on bank involvement in boards of directors (in 1914) or limitations on equity holding and underwriting by affiliates (in 1933), American banks already were effectively prohibited from developing long-term "junior insider" relationships with firms through limitations on branching. Thus the American financial system circa 1900 was divided into commercial banks and investment banks. Commercial unit banks lacked the wherewithal to finance large-scale industrial enterprises, and so concentrated almost exclusively on financing commerce. To the extent they did finance industrial enterprises, it was mainly indirectly through their holdings of corporate bonds. This marked an important change in the activities of commercial banks after the 1880s. Earlier, commercial banks, notably in New England, had been the primary sources of funds for industrial firms during the epoch when industrial firms were small, local enterprises. After 1880, investment banks took over the role of industrial financiers, underwriting industrial credit during this period almost exclusively through long-term debt issues, distributed through syndicates involving thousands of local distributors. This market was restricted mainly to large, mature industrial firms. Young, growing industrial firms were forced to rely on retained earnings or small amounts of local bank credit to finance their investment needs.

Prior to 1914, investment bankers were the principal delegated monitors serving on corporate boards of directors. But these investment bankers did not have the same relationships with their clients as full-service universal banks of the German mold or main banks in Japan. The ultimate outside claimants on the firms were not the investment bankers, but a multitude of bond holders, and to a lesser extent, stockholders, and there were only very indirect relationships between underwriting investment bankers and these claim holders. Morgan and

his peers did provide important corporate governance (DeLong, 1991, Ramirez, 1993), but they were not primary stakeholders in the firm, or managers of claims on the firm to the same extent as Japanese main banks or German universal banks.

The rise of investment banking affiliates of commercial banks in the 1920s was associated with a widespread consolidation and branching movement in banking during this period, which like that of the 1980s resulted from primary commodity price decline and consequent unit bank distress. Consistent with the above argument that economies of scope in universal banking depended on the ability to branch and consolidate the banking system, industrial finance by commercial banks flourished as their scale and geographical range expanded. From 1922 to 1929, the number of investment banking affiliates of commercial banks rose from 277 to 591. During this same period 3,408 banks merged (triple the rate of the previous seven years), while the number of branching bank facilities rose from 2,411 to 4,117. These progressive trends in commercial banks' involvement in industrial finance were halted in the 1930s. Affiliates were outlawed in 1933. Just as important, the trend toward larger banks and widespread branching was retarded by the banking legislation of 1933 and 1935, which sought to protect unit banks and limit further consolidation.

V. German Universal Banking and Corporate Finance, 1870-1914

Even the experiments with "universal banking" in the United States in the 1920s fell far short of true universal banking as it had existed in Germany as early as the 1880s. American banks' main involvement in corporate finance remained as small purchasers of bonds in syndications involving thousands of distributors. In Germany, a few large banks operated

nationwide branching networks. These banks lent directly to firms through short-term credit, underwrote firms' securities issues, and placed the issues in large part directly through their own trust departments. Universal banks lent money to young, growing firms first through short-term overdraft credit (called kontokorrentkredite), and later converted this short-term debt into long-term securities, of which the greater part was equity rather than debt. This equity was held by the banks' trust customers, and the banks often exercised control over firms through their control of trust-account proxies. In the early stage of the firm-bank relationship, banks used rollover threats and covenants to make their debt effectively senior, and to protect their interests against opportunistic managers. As the firm matured, and as banks became confident of their long-run viability, banks invested their time and energy in corporate governance directly, and at the same time became managers of controlling interests of junior equity claims.

It is commonly argued that universal banking contributed to rapid German industrialization by reducing the costs of external finance for industry. In addition to faster industrialization, universal banking allowed greater efficiency. For example, easy access to capital encouraged efficient integration of the German utility system across regions. Carlson (1991) argues that the inefficient fragmentation of the U.S. electrical system reflected financing constraints on individual producers that limited coordination and standardization.

What quantitative evidence can one muster that universal banking reduced the costs of corporate finance in Germany during its industrial revolution? According to the arguments in favor of universal banking, lower costs of monitoring and controlling firms. and hence of convincing individuals to hold corporate claims, imply that corporate finance costs should have been lower in Germany. In particular, the costs of issuing securities, especially junior securities

like equity, should have been lower. German industrial firms should have issued relatively more equity than bonds, and should have issued equity at a lower cost than in the United States. In what follows, I provide evidence of a greater reliance by German firms on equity issues, and a lower cost of bringing equity to market.

From 1900 to 1913, the volume of net bond issues (net of retirements) in the United States was roughly the same as stock issues. During the same period in Germany, gross bond issues were roughly half the volume of equity issues. Looking at balance sheets of non-financial corporations in the two countries in 1912, bonds and notes accounted for more than half of the book value of corporate equity in the United States, but only 10 percent in Germany (Calomiris, 1993, Table 5). Moreover, to the extent that equity was issued in the United States during this period, it was typically associated with corporate reorganization, rather than with offerings of new capital by existing firms.

The high cost of issuing equity in the United States explain its relative dearth. This cost is apparent in investment banker's "spreads" for common stock issues, defined as the difference between the market value of securities issued and the value received for these issues by the issuing firm. Data on spreads are useful for three purposes. First, average issue costs provide an overall comparison of the costs of issuing securities in the United States and Germany. Second, variation in spreads across securities and firms of different types can be used to gauge cross-country differences in the relative costs of issuing particular kinds of securities. For example, one would expect equity issues to be especially costly in the United States relative to Germany because of the greater costs of placing junior securities in a non-universal banking system. Finally, firm-level data on the factors that raise or lower costs of securities issues offer

evidence on the sources of the costs of issuing bonds and stocks. For example, one can examine whether bankers' spreads primarily reflect information costs, physical transaction costs, taxes, or economic rents of the investment banker.

American investment bankers have guarded the details of their financial arrangements carefully, and data on investment bankers' spreads are notoriously hard to come by. For the United States, detailed data are known only for a few cases prior to the 1920s, and only after 1936 are data available for the whole population of securities issuers. For Germany, I have been able to locate some data on individual spreads for the pre-World War I period from Saling's Borsen Jahrbuch. For many firms (roughly half), Saling's reports details of the underwriting costs of equity issues and/or the total amount of funds received by firms through equity issues.

Data on commissions for common stock issues earned by German banks from 1893 to 1913 are provided in Table 1. The sample of firms for which data were collected include all firms in the electrical industry (which includes manufacturers of electrical equipment and operating power plants) and firms in the metal manufacturing industry whose names begin with the letters A through K. Both of these industries are important producers of new products and both are central to the second industrial revolution. The metal manufacturing industry includes many small firms, while the electrical industry is dominated by large firms, so together these two industries can provide some evidence on the role of firm size and issue size in determining bankers' commissions. For both industries I divide the sample into small and large issues (less than or greater than one million marks, which equals $220,000). For metals I also report data for firms with small total capital in 1913 (less than 2 million marks). The difference between average spreads and average total costs is 1.41 percent for the electrical industry and 1.40

percent for metal manufacturing, which suggests that taxes and physical costs were generally included in total costs and not in commissions. Bankers' commissions averaged 3.67 percent for the electrical industry and 3.90 percent for metal manufacturing. Commissions on small and large issues are essentially the same. Although small manufacturers' issues show lower average costs, the difference is not statistically significant for this small sample. Metal manufacturing firms with low total capital had average commissions of 4.11 percent, compared to 3.90 percent for the industry as a whole. Again, this difference is small and not statistically significant. Overall, these data support the view that commissions on common stock were roughly three to five percent, and that they did not vary much by industry, firm size, or size of issue.

For the United States, firm-level data on bankers' commissions are not generally available for the pre-World War I period. Indeed, the lack of equity issues in the United States historically made it difficult for the Securities and Exchange Commission to locate data on common stock spreads prior to 1936. Even with respect to bonds and preferred stock, the SEC's retrospective study only begins in the 1920s. Despite this problem, it is possible to gauge roughly the range of commission charges during the pre-World War I period using data from the later period and a few observations on individual transactions from the pre-World War I period. Data on banker spreads for bonds, preferred stocks and common stocks spreads for the 1930s reported in Table 2 are a reasonable, and possibly a conservative, measure of their pre-World War I values. There is little evidence of change in preferred stock or bond spreads from the 1920s to the mid-1930s, so there is little reason to believe that spreads were influenced by the Glass-Steagall separation of commercial and investment banking (Calomiris and Raff, 1993). As argued above, the fundamental restrictions on universal banking were regulations that

fragmented the banking system, and these were in place long before Glass-Steagall. Moreover, there is some discussion of spreads for the pre-World War I period that confirms this view. Brandeis (1914, pp. 94-99) discusses bankers' spreads at length in his attack on the money trust. He notes that Morgan's spread exceeded 20 percent for the organization of U.S. Steel, and was 25 percent for underwriting the "Tube Trust." More generally, Brandeis (1914, p. 95) writes:

> Nor were monster commissions limited to trust promotions. More recently, bankers' syndicates have, in many instances, received for floating preferred stocks of recapitalized industrial concerns, one-third of all common stock issued, besides a considerable sum in cash. And for the sale of preferred stock of well established manufacturing concerns, cash commissions (or profits) of from 7 1/2 to 10 percent of the cash raised are often exacted. On bonds of high-class industrial concerns, bankers' commissions (or profits) of from 5 to 10 points have been common.

These figures are similar to the numbers for the mid-1930s reported in Table 2.

Interestingly, the spreads for common stock far exceed those for preferred stock, which in turn far exceed those for bonds. This is what one would expect if the spreads largely represent compensation for information costs incurred in arranging the issues. The underwriting (insurance) aspect of the investment bankers' services do not explain the differences in the spreads for different types of securities. In fact, best-effort flotations, on which there is no underwriting, show larger commissions on average than underwritten flotations. This typically is explained by the fact that best-effort flotations involve riskier firms (Friend, 1967, p. 39), and therefore entail greater due diligence and marketing costs.

It is worth emphasizing how large these spreads are. A 20 percent spread indicates that a firm only receives 80 cents for every 1 dollar of claims it issues. This places a substantial cost on investments, especially by young, unseasoned firms. An investment opportunity must be able

to generate enough income to pay interest or dividends to claimants and compensate existing shareholders by an amount (in present value) in excess of 20 percent of the project's cost. There is corroborating evidence from the 1930s that external finance costs placed wedges of this magnitude between the social and private benefits of pursuing investment projects (Calomiris and Hubbard, 1992).

The data reported in Tables 1 and 2 indicate a substantially lower average cost of bringing equities to market in Germany, which helps to explain the small amount of equity issues in the United States. German bankers' spreads on equity were less than one fourth those in the United States. Small German firms were able to issue equity for less than the cost large American corporations paid for issuing bonds.

The U.S.-German underwriting spread comparison illustrates more than the high cost of capital in the United States. It also indicates that rent extraction is an unlikely explanation of high underwriting costs in the United States. German banking was at least as concentrated and powerful an industry as the purported money trust of the United States. Yet their spreads were quite small. Thus higher average U.S. spreads likely reflected higher underlying costs of bringing issues to market in the United States. The fact that spreads for small firms and small issues in Germany were the same as for large firms is also significant. In the United States, smaller firms suffered significantly larger spreads, as shown in Table 3, and firm size has also proven important is cross-sectional regression analysis of spreads (Mendelson, 1967). Thus the lower cost of equity issues in Germany relative to the United States affected the financing cost of small firms even more than shown by comparisons of average commissions. This lends credence to the view that "infant-industry" advantages and lower information and governance

costs (which are most relevant for small, growing firms) are an important part of the explanation for why German commissions were lower.

There is additional evidence from time series and cross-sectional analysis of bankers' spreads in the United States that also suggests that spreads were more a function of information cost than rent. First, the fact that spreads were larger for preferred stock than bonds, and largest for common stock, is consistent with the information-cost interpretation of the spreads, and not with the rent-extraction interpretation. As Friend (1967, p. 157) shows, concentration in American investment banking has always been highest in bond underwriting, yet bonds have always enjoyed the lowest spreads. Second, as Table 3 shows, common stock spreads fell most dramatically from the 1930s to the early 1960s, but this was not associated with increased competition. Friend (1967, p. 163) finds that the only reduction in concentration of investment banking over this period occurred in the bond market, in which spreads fell least. Third, cross-sectional studies of stock and bond spreads (Cohan, 1961, Mendelson, 1967) find substantial evidence linking variation in spreads to "quality" or information-related variables. For example, bond spreads increase with bond yields. Stock spreads are higher for issues that include "extra inducements," and for issues with lower-quality underwriters, which Friend (1967) and Mendelson (1967, pp. 445, 474) associate with lower quality firms. The most plausible explanation for the technological change that lowered spreads over time was the increase in bulk sales to institutional investors, which reduced the signalling and marketing costs of appealing to a widely dispersed group of investors (Mendelson, 1967, pp. 413-19). The rise of direct placements after World War II also provided an alternative to syndication.

VI. Conclusion

I have argued that the relatively low costs of external finance for German industry in the pre-World War I era resulted from universal banking. Long-term relationships between universal banks and firms minimized costs associated with monitoring and controlling the use of funds, and distributing junior securities to investors willing to hold them. This was a two-sided relationship. Banks were able to provide low-cost finance to firms because trust customers were willing to hold junior claims on firms; this willingness reflected confidence by trust customers in bank discipline over firms, which was made possible by concentration of control over stock within the bank, and by underwriter/trust managers' incentives to control and evaluate firms' risks properly.

There are at least two lessons from this analysis for the current policy debate over universal banking. First, it is possible that the most important benefits of universal banking do not accrue to intermediaries, but to their customers. Thus studies of universal banking that focus on bank profits or diversification have missed an important element of the potential gains from deregulation. Second, within-regime studies of scale and scope economies of banking may provide an underestimate of the gains from deregulation because economies of scale and scope in banking may depend on banks' abilities to operate wide ranging networks with broad powers. Cross-regime comparisons can provide more insight into counterfactual questions about the likely results of deregulation.

It is not clear whether the costs of restrictions on universal banking remain large today in the United States. Endogenous financial innovations have mitigated the costs of regulatory restrictions, and in the past decade the Federal Reserve Board has reversed some of the

limitations on securities activities by bank holding companies. The lessons of history are clearer for developing and transitional economies that lack the sophistication of American financial markets. Allowing banks to perform many services jointly over a wide geographic area can hasten rapid economic growth, technological progress, and industrialization.

References

Brandeis, Louis D. (1914). Other People's Money and How the Bankers Use It. New York: Frederick A. Stokes.

Brown, David T., Christopher James, and Robert M. Mooradian (1991). "The Information Content of Exchange Offers Made by Distressed Firms." Working paper, University of Florida.

Calomiris, Charles W. (1992), "Regulation, Industrial Structure, and Instability in U.S. Banking: An Historical Perspective." In Structural Change in Banking, edited by Michael Klausner and Lawrence J. White. New York: New York University.

Calomiris, Charles W. (1993). "The Costs of Rejecting Universal Banking: American Finance in the German Mirror, 1870-1914." In The Coordination of Economic Activity Within and Between Firms, edited by Naomi Lamoreaux and Daniel Raff. Chicago: University of Chicago Press.

Calomiris, Charles W., and R. Glenn Hubbard (1992). "Internal Finance and Investment: Evidence from the Undistributed Profits Tax of 1936-1937." Working paper, University of Illinois.

Calomiris, Charles W., and Daniel M.G. Raff (1993). "The Evolution of Market Structure, Information, and Spreads in American Investment Banking." Working paper, University of Illinois.

Carlson, W. Bernard (1991). Innovation as a Social Process: Elihu Thomson and the Rise of General Electric, 1870-1900. Cambridge: Cambridge University Press.

Cohan, Avery B. (1961). "Cost of Flotation of Long-Term Corporate Debt Since 1935." Research Paper 6, School of Business Administration, University of North Carolina.

Cornett, Marcia Millon, and Hassan Tehranian (1992). "Changes in Corporate Performance Associated with Bank Acquisitions." Journal of Financial Economics 31 (1992), 211-234.

De Long, J. Bradford (1991). "Did Morgan's Men Add Value?" In Inside the Business Enterprise: Historical Perspectives on the Use of Information. Chicago: University of Chicago Press, 205-36.

Friend, Irwin (1967). "Over-All View of Investment Banking and the New Issues Market." In Investment Banking and the New Issues Market, edited by Irwin Friend, James R. Longstreet, Morris Mendelson, Ervin Miller, and Arleigh P. Hess, Jr. New York: The World Publishing Company, 1-79.

Gilson, Stuart C., Kose John, and Larry H.P. Lang (1990). "Troubled Debt Restructurings." Journal of Financial Economics 27, 315-353.

Hoshi, Takeo, Anil Kashyap, and David Scharfstein (1990a). "Bank Monitoring and Investment: Evidence from the Changing Structure of Japanese Corporate Banking Relationships." In Asymmetric Information, Corporate Finance, and Investment, edited by R. Glenn Hubbard, 105-26. Chicago: University of Chicago Press.

Hoshi, Takeo, Anil Kashyap, and David Scharfstein (1990b). "The Role of Banks in Reducing the Costs of Financial Distress." Journal of Financial Economics 27 (September), 67-88.

James, Christopher (1987). "Some Evidence on the Uniqueness of Bank Loans." Journal of Financial Economics 19, 217-35.

Jensen, Michael C., and William H. Meckling (1976). "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." Journal of Financial Economics 3, 305-360.

Lummer, Scott L., and John J. McConnell (1989). "Further Evidence on the Bank Lending Process and the Capital-Market Response to Bank Loan Agreements." Journal of Financial Economics 25 (January), 99-122.

Mayer, Colin (1988), "New Issues in Corporate Finance," European Economic Review (December), 1167-1189.

Mendelson, Morris (1967). "Underwriting Compensation." In Investment Banking and the New Issues Market, edited by Irwin Friend, James R. Longstreet, Morris Mendelson, Ervin Miller, and Arleigh P. Hess, Jr. New York: The World Publishing Company, 394-479.

Ramirez, Carlos (1993). "Did J.P. Morgan's Men Add Liquidity?" Working Paper, Harvard University.

Sheard, Paul (1985). "The Main Bank System and Corporate Monitoring and Control in Japan." Journal of Economic Behavior and Organization 11, 399-422.

Toevs, Alden L. (1992). "Under What Circumstances Do Bank Mergers Improve Efficiency." In Credit Markets in Transition: Proceedings of the 28th Annual Conference on Bank Structure and Competition. Chicago: Federal Reserve Bank of Chicago, 602-28.

TABLE 1

Bankers' Spreads and Total Issuing Costs for German Common Stock Issues, 1893-1913
(Percent of Issue)

	Mean Bank Spread	Mean Total Cost
All Issues		
Electricity	3.67	5.08
# Firms	13	12
# Obs.	21	20
Manufacturers	3.90	5.30
# Firms	19	15
# Obs.	30	20
Issues Less Than 1 Mill.		
Electricity	3.94	5.24
# Firms	4	3
# Obs.	7	3
Manufacturers	3.45	5.29
# Firms	10	10
# Obs.	18	15
Firms with 1913 Capital Less Than 2 Mill.		
Manufacturers	4.11	5.93
# Firms	3	5
# Obs.	6	5

SOURCE: Calomiris (1993), Table 7.

DEFINITIONS: Percent bankers' spreads are defined as the difference between the amount paid for an issue by purchasers and the amount paid by the banker to the issuing firm divided by the total amount paid for the issue. Total costs include taxes, printing costs and commissions.

TABLE 2

Banker Spreads in the United States Before World War II
(Percent of Issue)

	Common	Preferred	Bonds
Issues < $5 mill.	(1935-1938)	(1935-1938)	(1935-1938)
Total Costs	18	10	5
Compensation	16	9	4
Other Expenses	2	1	1
# of Issues	241	206	210
All to Public, IBs	(1938)	(1938)	(1940)
Total Costs	22	12	3
Compensation	20	11	2
Other Expenses	2	1	1
# of Issues	68	37	76
All to Public, IBs	(1938)	(1938)	(1940)
TC, Underw. Issues	23	4	3
TC, Best-Efforts	21	14	16

SOURCE: Calomiris (1993), Table 8.

DEFINITIONS: "All to Public, IBs" refers to all issues of securities to the public transacted through investment bankers. "TC" refers to total cost. Best-effort issues are placed by investment bankers without price guarantees.

TABLE 3

Costs of Flotation of Primary Common Stock Offered Through Dealers

Dates	Size of Issue	Number of Issues	Average Cost (%)
1935-1938	Issue < $5 Mill.	241	18
1945-1949	Issue < $5 Mill.	208	15
1951-1955	Issue < $5 Mill.	178	15
1963-1965	Issue < $5 Mill.	369	12
1940	Issue > $5 Mill.	11	12
1945-1949	Issue > $5 Mill.	49	8
1951-1955	Issue > $5 Mill.	52	6
1963-1965	Issue > $5 Mill.	107	7

SOURCE: Calomiris (1993), Table 10.