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BANK SECURITIES HOLDINGS AND INDUSTRIAL FINANCE BEFORE WORLD WAR I: BRITAIN AND GERMANY COMPARED

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Abstract

Orthodox paradigms hold that through direct involvement with firms, the German universal banks funneled substantial amounts of financial capital into industry during the half century before World War I. At the same time, by avoiding such engagement with industrial companies, British banks are thought to have disadvantaged that country's economy with respect to its continental and American competitors. Using balance sheet data for the British deposit banks and the German universal banks, this paper shows that the German and British banks held approximately the same proportion of their assets in the form of non-government securities. In addition, the paper uses details garnered from two of the largest German banks to demonstrate that the universal banks became directly involved in only a few companies, that the total of these equity holdings amounted to a small share of bank assets, and that often the shares remained on the banks' books only because of an insufficient market for new issues. Thus, the idea that the German universal banks purposely took long-term stakes in industrial companies in order to credibly commit to behaving in the long-run interest of the firms finds limited support from this analysis.

Bank Securities Holdings and Industrial Finance Before World War I: Britain and Germany Compared

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Financial systems vary significantly between Britain and Continental Europe, with formal securities markets prevailing in the former and banks dominating in the latter. According to the traditional paradigm, strong, universal banks played a central role in the industrialization of Germany. British banks, in contrast, have been criticized for taking a limited part in corporate finance and are seen by many as having failed to promote industrial investment.

Criticisms of the British banks, provoked largely by the perceived slothfulness of the British economy in the late Victorian and Edwardian periods, have become commonplace over the past century [Foxwell, 1917; Elbaum and Lazonick, 1986; Kennedy, 1987; and Pollard, 1982].[2] As Michael Collins has suggested, complaints about the British financial system rest on two assumptions: first, that British economic growth was constrained by a lack of capital, and second, that banks could have, but refused to, provide capital to industry.

Parallel assumptions underlie the common perception of success of the German system. That is, the universal banks are seen as having actively and purposefully injected capital into industrial enterprises. The resulting expansion of capital available to industry is thought to have propelled the rapid growth of the German economy between 1870 and 1914. In his well-known critique of British financial institutions William Kennedy claimed that "...capital markets in the U.S. and Germany, by making resources available to a large group of technologically progressive industries on a scale unequaled in Britain, account for much of the difference in the economic growth performance between those two countries and Britain in the half century after 1865" [Kennedy, 1987, p. 120].

One way in which the German style of finance is thought to have benefitted industry is through the banks' extensive holding of industrial shares. Taking equity positions in the firms they underwrote, supposedly enabled banks not only to provide financial capital, but also to stabilize the price of their client firms' shares. Furthermore, an equity stake in an industrial company conferred on the bank the right of representation on the firm's supervisory board–a position that, theoretically at least, yielded considerable influence over firms' investment planning. Perhaps most important among the purported benefits of the German system of finance, long-term equity stakes held by banks in industrial firms are argued to have provided the incentive for banks to act in the long-term interest

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[2] See Clay, 1929; and Carrington and Edwards, 1979, on the inter-war and post-World War II periods; Collins, 1991, presents a critique of the literature.

of the firms it financed [Gerschenkron, 1962; Riesser, (1910, 1911); Wallich, 1905; and Chandler, 1990].[3] Thus, direct industrial holdings by universal banks are thought to have promoted strong industrial investment in Germany. The British banks, in contrast, are thought to have abstained from equity participations in non-financial companies, and many have perceived this as evidence of failure on the part of the British financial system.

This paper abstracts from the question of the growth performance of the British and German economies and examines, instead, the securities holdings of banks in the two countries concerned.[4] On the basis of balance sheet data of the British commercial banks and the German joint-stock universal banks, this work offers a much-needed, direct comparison of the engagement of the two types of banks in the equity financing of industry.

The findings indicate that preceding World War I, the banks' holdings of non-government securities were similar.[5] In aggregate, banks' securities holdings amounted to a small share of GNP (or financial assets) in either country, but the ratio is higher for Britain than for Germany. Firm-level study of two of the largest German banks suggests further that the universal banks took positions in only a small number of companies; the total stakes of which amounted to a small portion of the banks' assets. Moreover, the investigation underscores the fact that, like British investment banks, the universal banks often held companies' shares for several years only because of difficulties encountered in floating new issues.

The literature to date has offered only a few explicit, quantitative comparisons of British and German banks, yet this paper is not the first to question the strict delineation of the two systems. In fact, recent research has begun to undermine the orthodox views of British and German industrial finance. Wide-ranging evidence has shown that in general the universal banks exerted little control over industrial firms, mobilized limited capital through expansion of deposits, engaged relatively late in the practice of interlocking directorates, and failed to either promote rapid expansion or ease liquidity constraints of affiliated firms [Wellhöner, 1989; Fohlin (1996, 1997); and Edwards and Ogilvie, 1996]. At the same time, new work has demonstrated that the British banks provided medium- and long-term finance through rolled over short-term credits (as is often attributed to the German banks) and offered guidance in business affairs [Collins, 1991]. Thus, while traditional paradigms remain popular, both outright condemnation of the British banks and unqualified celebration of the German banks are clearly unwarranted.

Financial Institutions in Britain and Germany

British and continental European financial institutions are thought to have developed

[3]For a modern comparison of several countries, see Mayer, 1985.

[4]Recent work has questioned the existence of a British decline. See Crafts, Leybourne, and Mills, 1989.

[5]Indeed, when government investments are included, German banks held a smaller share of securities than their British counterparts.

along significantly different lines over the course of the nineteenth and early twentieth centuries. To illuminate the institutional structures in the two countries, Table 1 provides an overview of the British and German financial systems at various points between 1860 and 1913. Total assets of financial institutions as a share of gross national product, given in the bottom row of the table, grew substantially in both Britain and Germany over the period but expanded more in the latter than in the former. Furthermore, while Britain's ratio exceeded Germany's in 1860 (57 percent versus 40 percent), the British fell below the Germans by 1900 (93 percent versus 114 percent). The gap grew to over 50 percent by World War I (103 percent versus 158 percent).[6]

Table 1 here.

The differences in structure of the British and German financial sectors complicates direct comparison of the two cases. Virtually all of the functions relating to corporate finance fell under the purview of one institution in Germany: the universal bank. In Britain, however, distinct institutions serviced various, partially-overlapping segments of the corporate financing sector. The British financial system did not observe a strict dichotomy between long-term, investment banking and short-term commercial services, but only the German system explicitly combined the two types of business. Thus, comparing the German universal banks to the British deposit (commercial) banks underestimates the share of corporate financing institutions in the British economy. Nonetheless, at 50 to 60 percent, British deposit banks and private banks accounted for twice the share of total financial institution assets in that country as the German universal banks (of both joint-stock and private forms) did in Germany. When the British discount houses and investment trusts are included, the gap widens.

In light of the alleged importance of the universal banks in the promotion of industrialization and economic growth in Germany, the relatively small share of these institutions in both financial assets and GNP comes as a surprise. Furthermore, the sharp increase in the share of the universal banks in Germany between 1900 and 1913, especially compared to the more gradual increases from 1860 to 1900, suggests that the universal banks' expansion followed, not preceded, the growth of industry.

In contrast, the largest increase in the British deposit banks' share of assets came between 1860 and 1880, and the growth rate leveled off thereafter. This is closer to the expected pattern for the prevalence of financial institutions over the development of the economy: as the economy matures, the banks should play a diminishing role in the mobilization of capital.

[6]The pattern reversed after the wars, and as of 1963, Britain led Germany again by a substantial margin.

Measuring Bank Assets

The data for this study come from a variety of sources. For Britain, Sheppard's [1972] compilation of the well-known *Economist* series and Goodhart's [1972] archive-based collection of individual bank balance sheet summaries provide the bulk of the statistics. Aggregate numbers for Germany come from the Deutsche Bundesbank's [1976] publication of money and banking statistics. For both countries, supplementary sources, such as stock market yearbooks and bank histories, offer additional insight.

Though the main goal of this paper is to compare the investments of British and German banks, it is difficult to do so without reference to other types of assets held. Given the apparent differences between the British and German financial systems, it is even more important to address the comparability of the various assets held by the banks. The data for this study are taken from published balance sheets of the various banks, and accounting conventions differed somewhat between the two countries. While the various assets therefore have different names, they can, to some extent, be categorized by purpose, liquidity, maturity, and riskiness.

For all of the available series, investments are aggregated under broad categories, so that no specific types of securities can be distinguished in general. The Sheppard series gives British government and government guaranteed investments separately from all others, but such disaggregation for the German figures begins only in 1912. The distinction between government and non-government securities is important mainly because of differences in liquidity and risk; with government issues considered safer than those of industrial corporations. While government securities ranked among the most secure options for banks' secondary reserves, some doubt, at least in the case of British Consols, began to arise toward the end of the 1890s: "It was formerly said that you could sleep on Consols and 'sell them on a Sunday.' A banker can certainly do the first now, but we are by no means so sure that he could do the second" [The Bankers' Magazine, 1900, quoted in Goodhart, 1972, p. 127].

Even when original balance sheets are available, apparently clear asset headings may be impossible to interpret unequivocally. For example, Riesser explained the difficulty of measuring exactly the banks' holdings of various types of securities:

> It would therefore be of but little value to give figures of securities held by the various banks, since the account 'securities owned' in many cases appears understated, inasmuch as a certain portion of the securities, properly belonging under that head, is booked under the head of 'syndicate participations.' On the other hand, it is equally true that securities which properly belong under the head of 'syndicate participations' are at times found booked under the head of 'securities owned.' [Riesser, 1911, p. 404].

Because of the mixed nature of the German banks considered, the confusion among reasons for banks' securities holdings naturally arises more for the German banks than for the British banks. In particular, the universal banks held securities both as investments on their own account and as a result of their underwriting and brokerage businesses, while British commercial banks held securities mainly as a form of secondary reserves. Nonetheless, the extent of securities holdings, regardless of reason, provides evidence of the relative engagement of the two types of banks in ongoing participation with industrial firms.

While the level of investments may be important on its own, it is more illuminating to measure securities relative to other assets. For both the British commercial banks and the German universal banks, financial assets other than investments fall into three broad liquidity or maturity classes: cash and very short-term loans, bills of exchange, and loans and advances. In the British case, very short-term loans, termed 'money at call,' consisted primarily of loans to stock brokers for transactions in the London discount market or the London Stock Exchange [7]

Generally, universal banks included call money (*täglisches Geld*) under the more general heading of lombards and reports. While typically also maturing within days or weeks, German lombard loans provided credit both for securities transactions and for covering lags between merchandise delivery and payment. Therefore, because only the cash portion of this category is truly comparable between Britain and Germany, even very short-term loans may be better placed under loans and advances. On the other hand, despite some divergence of purpose, both German and British banks made short-term loans on similar collateral (bills of exchange and other securities), and their liquidity and maturity were comparable.[8] Since the goal here is to compare securities holdings, distinctions among these other assets categories are important for context rather than for the direct purposes of this paper.

A final caveat deserving mention is that the British and German banks may have booked their assets in different ways. Goodhart indicates that the British commercial banks valued investments at or just below market value, but he also warns that "investments could be held on the books at any valuation, subject, of course, to the auditors' approval" [Goodhart, 1972, p. 21]. He offers an extensive discussion of the accounting procedures of the banks. Furthermore, it is clear that some banks failed to report any securities other than British, colonial, or other so-called gilt-edged investments. "Their holdings of these other securities were included with their advances or the miscellaneous item, to taste" [*Ibid*, p. 21]. Thus, the British banks' investments are probably somewhat undervalued relative to other financial assets, though it is also the case that fixed assets were written down as quickly as possible in order to bolster hidden reserves.

It is also clear that the German universal banks undervalued their assets, but the extent in this case is also uncertain. According to Riesser, "considerable security holdings are not regarded as a favorable sign, although during critical periods large holdings of

[7] See Goodhart, 1972, for descriptions of bank balance sheet items.

[8] See Riesser, 1911, for details of the specific conditions on lombard loans made by one of the great banks, Berliner Handelsgesellschaft.

this class may represent an increased proportion of particularly liquid assets, or a special reserve for deposits" [Riesser, 1911, p. 402]. He goes on to explain that

> excessive holdings of securities will be interpreted to mean either that the times have not been propitious for the issue business of the bank, or that it maintains excessive speculative engagements, or that it is involved to an excessive extent in speculative transactions on its own account...or, finally, that it has been unable to find sufficiently profitable employment for its funds. It is for these reasons that a large proportion of the writing off done by the banks occurs under the head of securities account" [Riesser, 1911, p. 402-3].

For the purposes of this paper, the important consideration is the relative extent of undervaluing in Britain and Germany, and that information, by its very nature, is difficult to ascertain.

Comparisons of Bank Securities Holdings

Figure 1 compares the aggregate securities holdings of the English and Welch deposit banks with those of the German great banks. Because of the uncertainties about valuation and reporting detailed above, it is important to avoid overemphasizing exact figures. Nonetheless, it is interesting to note that the British banks' securities holdings fall between 13 and 20 percent of total assets between 1884 and 1913, while those of the German banks range from 9 to 15 percent over the same period. Moreover, the British ratios remained above the German ratios for the entire period.

Figure 1 here.

The bank categories used in figure 1 are given in order to bias the results as much as possible in favor of finding German holdings significantly above those of the British. The Scottish and Irish deposit banks held higher levels of investments than did their English and Welch counterparts, and the largest of the German universal banks held more of their assets in the form of securities than did the provincial banks. Therefore, the fact that Figure 1 still shows the British banks' securities holdings persistently above the Germans' provides a strong indication that, despite the difficulties in measurement, the British banks held at least as great a position in securities as the German banks.

As previous authors have pointed out, the British banks held a substantial proportion of their investments in the form of British and colonial government and government-guaranteed assets. These assets being unrelated to industrial finance, and being seen as more secure than other types of securities, it is important to compare asset distributions net of government securities. Thus, Figure 2 compares non-government securities for the two countries. Because the German figures aggregated government and non-government securities until 1912, the figures for the years before that are estimated on the basis of the lowest holdings of government securities between 1912 and 1920 as well as on the detailed account of one of the great banks between 1896 and 1899.[9]

figure 2 here.

When government securities are excluded, the ratios are much closer together, however, the German banks still show no consistent tendency toward higher securities holdings than the British banks. Indeed, according to these estimates, the range was nearly identical in the two countries (7 to 12 percent for the German banks and 8 to 12 percent for the British). Such a finding would fall in line with expectations, if one thought that the two types of banks were roughly similar. Since underwriting and brokerage were among the primary functions of the universal banks, however, it should be expected that the German banks held higher levels of securities than did the British commercial banks.

Thus far, the numbers for the German banks have included securities holdings resulting from their underwriting and brokerage business. A significant portion of the universal banks' total investments arose out of their involvement in underwriting consortia (or syndicates). These participations therefore include some shares that remained on the banks' books only because of the banks' inability to place the shares. Thus, figure 2 also plots out the securities held by the great banks that arose neither out of the syndicate business nor from holdings of government securities.[10] This series gives an approximation of the proportion of assets the universal banks may have held as non-government securities had the universal banks focused primarily on commercial activities.

Another way to determine what proportion of German bank securities holdings might have resulted from underwriting and brokerage would be to investigate the securities holdings of British institutions engaged in investment banking. Phillip Cottrell provides two such examples, and his data illuminate the extent of securities holdings of investment bankers in the mid- to late-nineteenth century. One example comes from the General Credit and Finance Company, which in 1866 held approximately 15 percent of its assets in the form of securities. The majority (approximately three quarters) of this amount was held as shares [11] Many of these shares were probably of railway companies, but it is impossible to tell from the given figures.

[9]The proportion for great banks ranged from 17.6 to 28.6 percent of total securities held between 1912 and 1920. Given that this period covers the first World War, it would be natural to expect that government securities might comprise a higher proportion of securities than they might have in the preceding years. In the one detailing of bank securities holdings that I could find for the period before 1900 (Bank für Handel und Industrie, a great bank), government securities amounted to 24 to 55 percent of total securities (in the period 1896-1899). Thus, 17 percent seemed a conservative enough estimate of the proportion of all great bank securities held in the form of government securities.

[10]Non-syndicate securities were estimated using a similar method as that described for non-government securities. For the years in which disaggregated securities holdings were reported (1912 to 1919), syndicate-related securities amounted to 51 to 61 percent of total securities held. As with government securities, I used the lowest number during the period to estimate the proportion of securities due to syndicate participations.

[11]Cottrell, 1985, p. 419, reproduces the firm's balance sheet as given in *The Economist* of November 1866.

A second investment bank, the International Financial Society, apparently held even higher proportion of securities among its assets. In 1872, the bank kept nearly a quarter of its assets in the form of securities and listed another 50 percent in the form of 'lock-ups' [*Ibid*, p. 538]. 'Lock-ups' included all assets not readily liquidated, and as such, consisted partially of loans. By 1877, the International Financial Society had increased its securities holdings to 56 percent of assets [*Ibid*, p. 599].

Naturally, these banks cannot be compared directly with the German universal banks, but the forgoing examples do support the notion that the great banks in particular, because of their active engagement in investment banking, should be expected to have held a significantly greater share of their assets in the form of securities than did the British deposit banks.

To understand how important the banks' direct investment in industrial companies may have been for the growth of the economy, it is useful to combine the data on bank investments with that on bank assets relative to the economy as a whole. Table 1 gave bank assets as a percent of GNP for both Britain and Germany. Multiplying the aggregate share of non-government securities in bank securities by the fraction of bank assets in GNP produces the percentage of bank-held, non-government securities in GNP.[12]

Table 2 reports the results of the calculation and indicates that the non-government securities holdings of the universal banks ranged between two and four percent of GNP for the three decades preceding World War I. Even if the estimates are only approximately correct, the banks' holdings of non-government securities accounted for a very small share of the economy. The German banks' share did increase between 1880 and 1913, but their holdings of non-government securities still only amounted to four percent of GNP by World War I. Furthermore, the biggest part of the increase came after the major push of industrialization in Germany.

Table 2 here.

The British banks' holdings of non-government securities, though also low relative to GNP, were significantly higher than the German numbers throughout the period. In contrast to the German case, the banks' securities share of GNP rose between 1880 and 1900 and then leveled off. Given the measurement difficulties already discussed, however, it is best not to overemphasize the differences between the German and British numbers. Nonetheless, these calculations cast doubt on the idea that the banks' holdings

[12]Since the aggregate data for both Britain and Germany begin in 1880 and 1883, respectively, the securities figures for 1860 can only be given as estimates. For Germany, estimates must be based on data for the one bank on which securities data exist (Disconto-Gesellschaft, discussed in the next section). For this bank, non-government securities amounted to 15.74 percent of total assets in 1859 and 14.03 percent in 1860. Because the one bank used may have held unusually high levels of non-government securities, the percentage for Germany is probably significantly overstated. Using the higher percentage for the sake of conservatism yields an estimate of 2.4 percent. For Britain, using the largest non-government share percentage from the period 1880-1913 (13 percent) produces an estimate of 4.4 percent.

of securities provided a significant stimulus to either the German or the British economies during the last half of the nineteenth century.

Evidence from Two Great Banks

At least in the German context, details of specific securities held and records of any kind for the pre-1880 period are generally unavailable. Nonetheless, some details are available for two of the earliest German joint-stock universal banks. Walther Däbritz presented a sketch of the activities of the Discontogesellschaft (DG) in its early years, and a later *Festschrift* published the annual accounts of the bank through 1900. Evidence from a different source, *Saling's Börsen-Jahrbuch*, sheds light on the holdings of the Darmstädter Bank (Bank für Handel und Industrie).

Figure 3 brings together the available data and traces the movements in the ratio of total securities to assets for these two banks. The solid lines represent the holdings of the Discontogesellschaft, while the squared points plot the data for Darmstädter Bank. The fine line comprises all securities held by the DG over the period 1856 to 1900 and indicates that such holdings ranged between 9 and 35 percent of assets over the period. The proportion of securities holdings started off at around 12 percent of assets but grew rapidly over the first decade of the bank's existence. The bank seems to have unloaded securities during the boom years of the early 1870s but then took on extremely high shares of securities during the middle of that decade. While the bank's holdings continued to fluctuate throughout the remainder of the nineteenth century, the proportion of securities followed a generally downward trend toward the end of the period.

figure 3 here.

From its founding in 1852 through 1855 (not pictured in figure 3), DG held no securities among its assets. Thereafter, the bank acquired substantial interest in securities, but a quantitative breakdown of securities 1856 to 1865 indicates that two mining companies accounted for the major share of DG's industrial holdings. Shares in the two firms, Heinrichshütte and Bleialf, amounted to around 11 percent of assets for most of the period in which the bank held the shares. Däbritz provides an account of the bank's involvement with these firms and indicates that such direct participation arose out of the bank's intention to convert the firms into joint-stock companies.

Having bought up Heinrichshütte in 1857, the bank invested heavily (equivalent to 25 percent of the firm's capital) in the expansion of production capacity. The timing was inopportune; immediately the firm faced rapidly-falling prices of iron and questions about the profitability of ironworks in general. In the six years following the bank's investment in the ironworks, the enlarged firm averaged earnings of approximately two percent of the total capital invested by the bank (50,000 Thaler per year on an investment of 2.5 million Thaler). During these years, according to Däbritz, "hardly a general meeting past in which the bank's management did not have to defend against sharp criticisms about the purchase of Heinrichshütte [Däbritz, 1931, p. 105]. The other two firms presented similar problems for DG, and the bank was forced to hold their shares until they could extricate themselves in the more favorable market of the late 1860s and early 1870s.

The heavier line in figure 3 shows the proportion of DG's assets held in securities other than Bleialf and Heinrichshütte. The vast majority of these assets were held in relatively conservative investments: government debt, railway shares and bonds, and other priority bonds and shares. With the exception of a few unimportant holdings of shares, the DG confined its participation in industry to three companies (the two already discussed plus another mining concern) [Däbritz, 1931]. Indeed, the bank's holdings of industry stocks amounted to between zero and three percent of its assets for the years in which disaggregated data are available (1852-1865). Thus, it can hardly be argued that even the early activities of the great banks involved extensive, direct involvement in industrial companies.

Though the disaggregated data for DG run out before the second wave of the German industrialization hit its peak, the story can be picked up in the 1880s using evidence from another of the great banks. Darmstädter Bank (BHI) published unusually detailed accounts of its securities holdings, and *Saling's* reproduced the information in its series on Berlin-listed companies. Table 3 gives securities by broadly-defined type for 1896-99 as well as the individual industrial shares owned at several points throughout the 1880s and 90s—both taken from *Saling's*.[13]

It is clear from the figures in Table 3 that holdings of industrial shares amounted to less than one percent of BHI's assets for most of the 1880's and 90's, and that, even at its peak, the proportion of industrial shares to assets only reached 1.3 percent (in 1882). The top section of Table 3 gives the breakdown among various types of securities and shows that, including railway and real estate shares, the total of non-bank equity shares probably reached only four percent of assets. When bank shares are included, the total rises to no more than 6.5 percent. It should be underscored that the earlier numbers are estimated based on the ratio of industrial shares to total securities for the period in which both types of data are reported (1896 and 1897). The proportion of assets held in industrial, railway, or bank shares for those years peaked at 3.7 percent. Thus, only if BHI held a significantly greater part of its securities in the form of bank shares in the 1880s than in the 1890s (doubtful, given that the concentration of banking accelerated in the 1890s), would 6.5 percent be an underestimate. These data provide further support for the notion that the great banks invested a relatively small portion of their portfolios in the equity of industrial firms.

Table 3 here.

As for the securities holdings in Britain, Goodhart provides some details for three British commercial banks (Metropolitan Bank, London and Midland, and Union Bank).

[13]Unfortunately, *Saling's* only began publishing in 1876, and the volumes before 1882 are scarce. Also unfortunate for this analysis, they stopped publishing details of securities holdings in 1899.

Nearly all of the investments reported consisted of British, colonial, or foreign government securities or railway stocks and bonds. Given his warnings about the banks' desire to hide any investments in industrial firms, however, it is impossible to tell for sure what industrial shares the banks may have held. Edelstein, however, has provided estimates of securities holdings in the U.K. more generally, and those results indicate an expansion of industrial holdings between 1871 and 1913. Industrial concerns and railways, both foreign and domestic, accounted for 37 percent of all securities holdings in 1871 and 62 percent by World War I. Home companies alone increased from 4 to 17 percent of U.K. holdings over the period [Edelstein, 1970, p. 235-7]. The banks might be expected to have participated to some extent in these investments, though proof of such a contention is apparently unavailable. Yet even if the British banks held no industrial shares, the evidence for DG and BHI suggest that the German universal banks were not far ahead on this count.

Conclusions

Because they are thought to permit direct control of firm behavior as well as indirect aligning of incentives in situations of imperfect information, equity stakes have been held out as an important feature of universal banking. Participation in industrial companies, particularly in Germany, is thought to have contributed significantly to the industrialization and general economic growth of that economy in the mid- to late- nineteenth century. The common perception that British banks avoided such direct engagement in industrial enterprises has often led to the conclusion that the British banking system failed to reach its potential in promoting economic growth.

While the German universal banking system has often provided an implicit yardstick against which to measure the performance of the British banks, only a handful of studies have directly compared the two institutions. Through direct comparison of securities holdings by British deposit banks and German universal banks during the half century before World War I, this paper has offered a new perspective on the involvement of banks in industrial firms. The results, while perhaps not vindicating the British banks, narrow the gap between the two systems in the realm of industrial participations. Aggregate data for the two countries indicate that the British deposit banks held a greater share of their portfolios in the form of securities than did the German universal banks, and that, even when government securities are excluded, the two types of banks maintained virtually indistinguishable proportions of securities among their assets. Furthermore, because the British deposit banks' assets amounted to a greater share of that country's GNP than the universal banks' assets did in Germany, holdings of non- government securities represented a greater share of GNP in Britain than in Germany.

Finally, the examples of Disconto-Gesellschaft and Darmstädter Bank underscore the limited number of firms reached by the industrial participations of even the largest universal banks. The two companies that accounted for the vast majority of DG's holdings in the 1850s and 60s remained in the bank's portfolio for over a decade only because of the limited market for the initial public offerings of these firms. Even in the 1880's and

90's, once the new issues business picked up tremendous steam, the Darmstädter Bank confined its holdings of industrial shares to under ten firms. Thus, even if the British deposit banks held no industrial shares, the difference between the industrial holdings of the two types of banks is not great. Comparison with British investment banks, moreover, reveals that, despite their active involvement in underwriting and brokerage, the German universal banks' portfolios of industrial shares were very small by investment bank standards.

The findings of this paper casts some doubt on the traditional conception of the universal banks as providing particularly important sources of corporate finance and oversight through their holdings of industrial shares. This paper does not, however, claim to judge the overall effects of German universal banking. Instead, the analysis attempts to quantify the extent of formal differences between two institutions. Direct participation in industrial firms represents only one way in which the universal banks may have promoted industry in Germany. Perhaps the banks offered vital services that simply cannot be identified or quantified through their holdings of industrial securities. In that case, however, the characteristics of importance to industrial development arise, not out of the formal structure of the institutions concerned, but rather from the informal, though perhaps systematic, way banks operated in this particular context.

The findings here provide one more piece of evidence that the orthodox view exaggerates the importance of the particular organization of the German universal banks for the industrialization of the German economy in the latter half of the nineteenth century. Thus, in drawing lessons for the modern problems of financing growth, qualitative variation in informal arrangements may emerge as a more important determinant of success than the formal structure of financial institutions.

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Table 1: Assets of Financial Institutions

Germany (billions of Marks)	1860	1880	1900	1913
Central bank	0.95	1.57	2.57	4.03
Large (nationwide) banks	0.39	1.35	6.96	8.39
Regional (local) banks				13.65
Private bankers	*1.50*	*2.50*	*3.50*	4.00
Specialized commercial banks				0.98
Savings banks, local	0.51	2.78	9.45	20.8
Savings banks, central				1.76
Credit unions, local	0.01	0.59	1.68	5.73
Credit unions, central				0.47
Private mortgage banks	0.04	1.85	7.50	13.55
Public mortgage banks	0.68	1.76	4.05	*7.20*
Life insurance companies	0.07	0.44	2.42	5.64
Property insurance companies		*0.35*	*0.83*	2.05
Social insurance organizations			0.87	2.44
Total for all financial institutions	4.15	13.19	39.83	90.69
Joint-stock credit banks/total	0.09	0.10	0.18	0.24
Joint-stock & private banks/total	0.46	0.29	0.26	0.29
Assets of financial institutions/GNP	0.40	0.73	1.14	1.58
Joint-stock & private banks/GNP	0.18	0.21	0.30	0.45
Great Britain (millions of Pounds)				
Bank of England	*55*	75	93	100
Deposit banks	*150*	432	879	1,146
Private banks	*120*	*200*	62	53
Post office savings banks		35	134	187
Trustee savings banks	42	47	57	71
Building societies	*10*	54	60	65
CWS and SCWS banks			1	6
Discount houses		35	37	67
Investment companies and trusts			*100*	
Life and other private insurance companies	80	155	311	530
Collecting societies			5	11
Industrial and provident societies		11	34	78
Friendly societies			33	54
National insurance funds				21
Total for deposit banks & private banks	270	632	941	1,199
Total for all financial institutions	457	1,044	1,806	2,389
Deposit banks/total	0.33	0.41	0.49	0.48
Deposit & private banks/total	0.59	0.61	0.52	0.50
Assets of financial institutions/GNP	0.57	0.95	0.93	1.03
Deposit & private banks/GNP	0.34	0.58	0.49	0.52

Source: Goldsmith, 1972.

Notes: Assets of large and regional German banks are summed through 1900. Estimates are italicized.

Table 2: Bank Holdings of Non-Government Securities/GNP

	1880	1900	1913
Germany	0.022	0.027	0.040
Britain	0.044	0.063	0.058

Source: See text for sources and calculations.

Table 3: Securities held by Darmstädter Bank (1882-1899)

Securities by Type	Value of shares (thousands of Marks)						
	1882	1886	1890	1896	1897	1898	1899
German and Prussian bonds				1,845	1,301	1,145	5,909
Foreign government and railroad debt				1,422	891	4,797	3,230
Railway, industry, and land shares	*6,000*	*4,119*	*4,990*	5,104	3,942	3,343	4,741
Bank shares				2,571	1,950	1,919	1,694
Miscellaneous				1,033	965	681	955
Total securities				11,975	9,049	11,885	16,529
Total assets	146,516	169,532	181,133	206,761	188,865	232,762	235,372
Rail, ind., and land shares/securities				0.512	0.542	0.339	0.345
Shares/assets	*0.041*	*0.024*	*0.028*	0.025	0.021	0.014	0.020
Shares plus miscell. securities/assets				0.030	0.026	0.017	0.024
Government securities/total securities				0.154	0.144	0.096	0.357
All securities/total assets				0.058	0.048	0.051	0.070
Industrial Shares Owned							
Württemb. Kattunmanufaktur	303	158	14	0	0		
Dessauer Wollengarn-Spinnerei	720	690	690	690	690		
Deutsche Gold- u. Silberscheide-Anstalt	420	0	0	0	0		
Frankfurter Hotel-AG	152	0	0	0	0		
Deutsche Wasserwerke	96	96	96	96	96		
Rheinische Wasserwerke	90	0	0	0	0		
Heilbronner Maschinenbau-Gesellschaft	86	86	0	0	0		
Wetterauer Zuckerfabrik	0	150	150	150	150		
Gross-Gerauer Zuckerfabrik	0	121	121	121	121		
Franken Compania Metalurgica de Mazarron	0	0	113	113	113		
Heilbronner Salzwerks	0	0	288	73	73		
Maschinen-anstalt Venulath & Ellenberger	0	0	0	100	100		
Miscellaneous	36	52					
Total industrial shares	1,903	1,353	1,472	1,343	1,343		
Industrial participations/total assets	0.013	0.008	0.008	0.006	0.007		

Source: *Saling's Börsen-Jahrbuch*, various years.
Note: Estimates are in italics.

Figure 1
Securities as a Share of Total Bank Assets
1884-1913

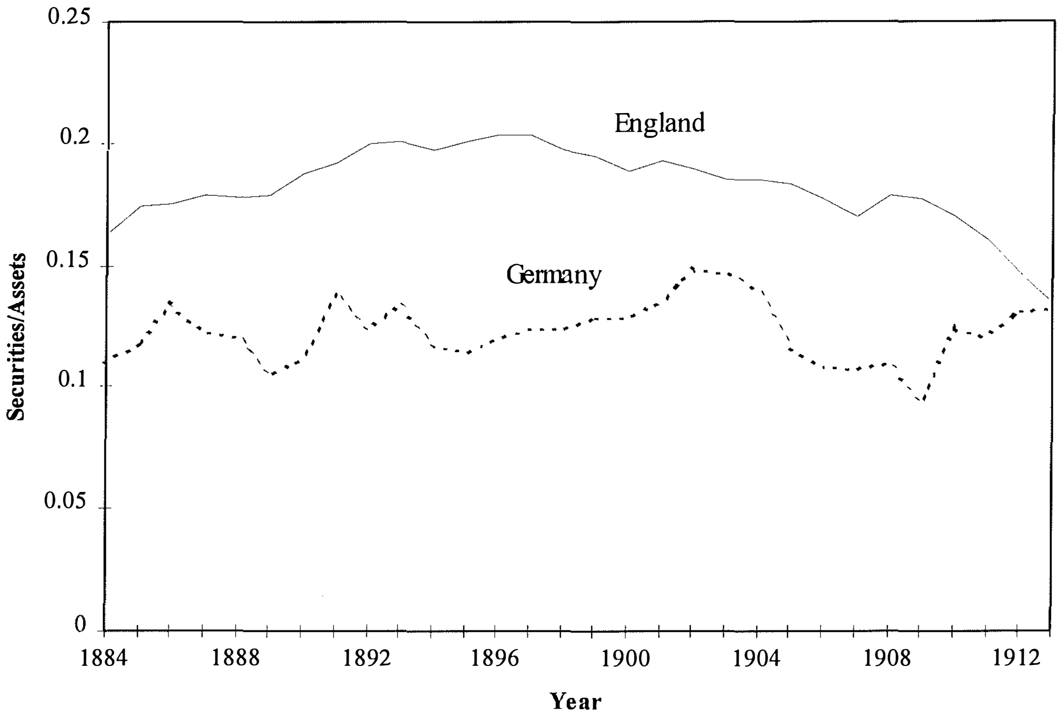

Figure 2
Non-Government Securities as a Share of Total Assets
1884-1913

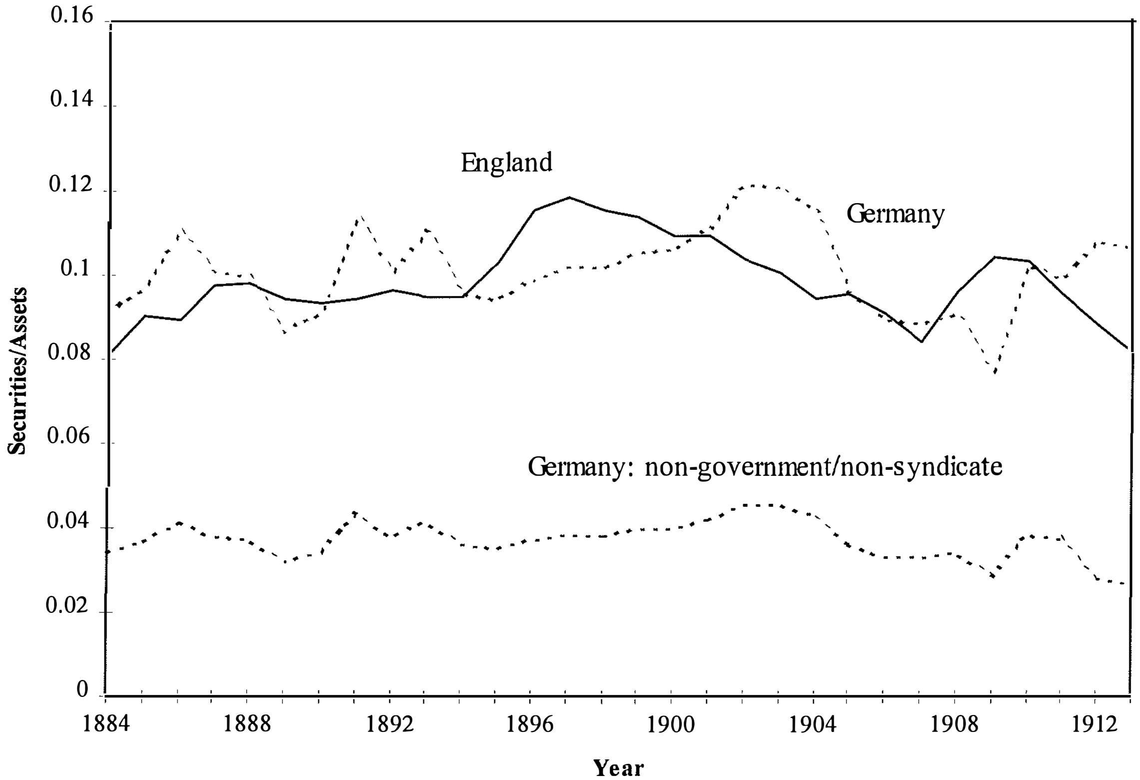

Figure 3
Securities as a Share of Assets
Discontogesellschaft (1856-1900) & Darmstaedter Bank (1882-1908)