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# **Structures and Trends in German Banking**

**by**

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# Structures and Trends in German Banking

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## Abstract

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In this paper, we investigate the claim that German banks are special compared to banks in other industrialised economies. We show that banks are of particular importance to the German economy—as financial intermediary, as lender to the corporate sector, and as part of the corporate governance system. Further, German banks are supervised by two supervisory institutions and have the highest deposit insurance in the world. And last but not least, German banks are numerous, perform poorly, and are part of a historically grown three-pillar system. Hence, German banks can indeed be characterised as unique when compared to other industrialised economies.

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Key words: Germany, Banks, Financial Systems, Corporate Governance, Three Pillar System, Bank Regulation

# 1 Introduction

The German financial system is often characterised as unique when compared to other industrialised countries. It is frequently cited as a role-model of a bank-based system as opposed to a market-based system. Equally often, the industry is described as a universal banking market. Another attribute refers to so-called relationship banking because of intimate ties between banks and enterprises. But what characteristics hide exactly behind these claims? Are German banks indeed different in terms of structure and performance?

In this paper we provide a coherent framework to put German banking into perspective. We conduct a comparison of German banking across countries, between bank sectors and over time. We critically review conventional wisdom by means of descriptive analysis. We deliberately point out that this paper therefore does neither attempt to empirically test for reasons of recent changes in the German banking industry, nor offers forecasts on future developments. Given the increased public interest as well as the controversy of the discussion about the performance and use of banks in Germany, we provide with this paper the fundament to derive relevant research questions and disentangle at times myths and facts.

We proceed as follows. In the next section, we analyse the importance of banks for the German financial system. We utilise a framework of three so-called subsystems to investigate many conventional claims such as those mentioned above. We find support that banks are of particular importance to the German economy: (i) as opposed to many Anglo-Saxon banks, German banks are despite increased competition and loosening regulations still the single-most important way how savers channel their funds to borrowers; (ii) SME, which form the backbone of the German Economy, rely mainly on long-term bank debt; and (iii) banks are an integral part of the German corporate governance system. In the third section, we analyse the regulatory and supervisory environment in which German banks operate. A particular focus rests on the dynamics of regulatory evolution. We show that banking regulation and supervision relies in general on the same instruments as in other industrialised economies and does not seem to be the reason for the prominent role of banks in Germany. In the fourth section, we analyse the characteristics of German banks. We do so by presenting some facts on domestic banking markets and then conduct a comparison to other industrialised countries. The structure and performance of German banks are described on the industry level. In the fifth section, we investigate private, public, and cooperative banks, which form the three-pillar system in German banking, in more depth than in the previous section including a brief historical overview of each sector's origins. An assessment of the evolution of balance sheets over time illustrates both the current state as well as changes in core business areas within each pillar. Finally in the sixth section, we conclude.

## 2 The Role of Banks in the German Financial System

In this section, we analyse the role of banks in the German financial system. We begin by presenting a framework suggested by Schmidt (2001) and Hackethal and Schmidt (2000). We distinguish three different financial subsystems. The first is the financial sector, which comprises banks, non-bank financial intermediaries (NBFIs) and financial markets. The primary task of this subsystem is to supply investment and financing products and services and we are interested in the preferred institutions Germany's economic agents use to finance their operations. The second subsystem represents financial patterns of surplus and deficit units. This subsystem mainly refers to the means by which savers store their wealth and the instruments employed by firms to finance their investments and operations. Savers and investors can be households, firms and the government, respectively. The third subsystem is dubbed corporate governance. Here, we investigate the mechanisms and rules according to which stakeholders decide whether to influence decision-making at firms and if so, how to do that.<sup>1</sup>

### 2.1 Financial Sector

The description of this element of the financial system focuses on the institutional perspective. Put differently, we concentrate here on the relative importance of different financial intermediaries. Traditionally, financial sectors are described either as market-based systems or bank-based systems.<sup>2</sup> Role-models of market-based systems are the US and the UK while Germany and Japan are often cited as examples of a bank-based system. Concerning the importance of financial sectors' roles consider Table 1 below. We relate total bank assets, the volume of commercial debt outstanding and stock market capitalisation to GDP.

Table 1 underpins the importance of German banks as preferred financial institution compared to debt and equity markets to fund operations. Relative to Japan, the UK and the US, the ratio of outstanding commercial credit is substantially higher and has continued to increase since 1987. Strikingly, the frequently as bank-based system described economy of Japan exhibits a ratio of commercial credit to GDP gradually dropping below the one found for the often as market-based described British economy. The development of outstanding commercial bonds, in turn, supports to some extent conventional wisdom as the UK and, to a lesser degree though, the US are found to depend more strongly on debt markets than both Japan and Germany. Finally, the market capitalisation is lending strong support for the traditional taxonomy as both the UK and the US clearly have deeper equity markets compared to Japan and Germany. The development of the financial system in the US is noteworthy. Only since the mid-1990s capital markets received growing interest. In fact, at the outset of the last decade, Japanese firms funded relatively more of their projects via equity markets. Therefore, the traditional classification of these countries as bank- versus market-based systems is sup-

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<sup>1</sup> Schmidt (2001) and Hackethal and Schmidt (2000) define a fourth subsystem of corporate strategy. It characterises firms to adjust their strategies either in a more gradual fashion over longer time horizons versus significant and more frequent discrete "jumps". They emphasise in their work the need to assess subsystems simultaneously in order to acknowledge that each element of the financial system has to be complementary with the others, i.e. the respective elements have to be both well implemented *and* fit to each other.

<sup>2</sup> See for example Goldsmith (1969), Mork and Nakkamura (1999), Weinstein and Yafeh (1998).

ported. But it is interesting to note that this is the result of an evolutionary process throughout the last decade. Before drawing pre-emptive conclusions let us therefore first define more explicitly what to understand under the two concepts, and then turn to results from the literature.

*Table 1: Commercial Loans, Bonds and New Equity Compared*

	<b>Loans <sup>1)</sup></b>				<b>Bonds <sup>2)</sup></b>				<b>Equity <sup>3)</sup></b>			
	<i>GER</i>	<i>JP</i>	<i>UK</i>	<i>US</i>	<i>GER</i>	<i>JP</i>	<i>UK</i>	<i>US</i>	<i>GER</i>	<i>JP</i>	<i>UK</i>	<i>US</i>
<b>1990</b>	78	98	61	38					21	96	85	52
<b>1991</b>	81	96	59	36					22	90	96	67
<b>1992</b>	82	94	62	34					17	61	87	71
<b>1993</b>	92	93	59	34	0.3	5.3	4.1	0.7	23	67	120	76
<b>1994</b>	94	92	55	35	0.4	4.7	4.2	0.7	24	75	109	71
<b>1995</b>	99	94	58	37	0.4	3.8	4.3	0.8	23	67	118	93
<b>1996</b>	106	92	74	37	0.4	3.5	4.8	0.9	28	64	138	108
<b>1997</b>	113	88	75	38	0.5	2.9	5.4	1.1	39	50	150	128
<b>1998</b>	117	84	74	39	0.6	2.6	6.4	1.4	51	62	166	144
<b>1999</b>	121	83	80	39	0.9	2.0	8.3	2.0	68	100	196	181
<b>2000</b>	129	82	92	41	2.1	1.3	10.4	2.4	68	67	181	155
<b>2001</b>	131	80	94	41	2.2	1.2	10.5	3.3	58	54	150	137

Notes: All numbers in percentages of GDP. GDP data from the time-series data base OECD.

<sup>1)</sup> Outstanding loans other than interbank lending at year-end. Commercial banks only for Japan, the UK and the US. German figures exclude specialised institutes. — <sup>2)</sup> Outstanding commercial bonds and commercial paper at year-end. — <sup>3)</sup> Market capitalisation at year-end of Deutsche Boerse Frankfurt, Tokyo, London, NASDAQ and NYSE, respectively.

Sources: OECD (2003); BIS (2004); World Federation of Exchanges (2004)

Three characteristics are typically identified to hold for market-based systems. First, capital markets are the most important institution to access funds. Second, banks are required to conduct wholesale and retail activities strictly separated from each other. Finally, within market-based systems, the role of non-bank financial intermediaries (NBFI) is comparably prominent.<sup>3</sup> They tend to be independent from banks and acquire a substantial part of the financing flows in the economy.

In contrast, bank-based systems exhibit banks, which dominate the financial sector. These systems frequently allow banks to engage in any activities, thereby fostering an industry of universal banks. Hence, we often find that the role of NBFI is small and that these firms are affiliated with banks.

Empirical evidence assessing the relative importance of banks and financial markets is provided by Levine (2002). He constructs four ratios to determine the nature of financial sectors of 48 countries over a period of 15 years. The first is called a structure-activity ratio, which measures the activity of capital markets relative to the intermediation activity of banks by relating the total value traded ratio to the bank credit ratio. The second is a structure-size ratio, measured by the market capitalisation ratio over the bank credit ratio. The third indicator is a

<sup>3</sup> Examples of NBFI's are (re-)insurance firms, security houses, investment banks, mutual funds and alike.

structure-efficiency ratio, calculated as the total value traded ratio times overhead costs. It is a measure of the efficiency of stock markets relative to that of banks. Finally, he creates a structure-aggregate measure which is an aggregate measure including the preceding three ratios. A higher value indicates that the economy is closer to having a market-based financial sector. His results suggest that the German financial system is indeed a bank-based one and identifies for instance the US as a market-based system.

Herrmann (2001) explains the traditionally lower relevance of financial markets in Germany vis à vis the US and the UK with two main arguments. Firstly, he points out the difference in legal systems in general and a less stringent enforcement of property rights in particular. Secondly, he cites the structure of the German economy where the vast majority of GDP is generated by small and medium-sized enterprises (SME) with limited access to financial markets. The lower development of financial markets is quantified for example in Edwards and Fischer (1994) by examining the gross sources of finance for investments of German firms. While bank borrowing approximately contributed 16 to 21 percent of funding between 1950 and 1989, the share of bonds and shares as means of financing remained negligible accounting for 1 and 2.5 percent, respectively. Allen and Gale (1995) compare the US and Germany and also note that while the bond market has some importance especially for the public sector it is insignificant for corporate lending. Equity and derivative markets are even more marginalised according to these authors.

With respect to the dominance of banks over NBFI as intermediaries further empirical evidence is provided by the ECB (1999). Here, the relative importance is measured by assets under management as percentage of GDP. While the results assert a relative decline of the importance of banks as intermediaries, Germany's credit institutions are still the dominating intermediaries both compared to other EU countries and relative to NBFI and financial markets.

A more direct evaluation of the "disintermediation" hypothesis can be found in Hackethal et al. (1999).<sup>4</sup> Analysing France, the UK and Germany between 1981 and 1996, they use national account data to investigate, among other measures, both asset and liability intermediation rates of all nonfinancial sectors (NFS) to banks.<sup>5</sup> The former measures the share of all NFS claims on banks relative to total financial assets of NFS. The latter relates all financial liabilities of NFS to banks to total financial liabilities of NFS.

The asset intermediation ratio declines during the 15 years of observation in Germany modestly from 55 percent to 50 percent, both the level and trend is much more pronounced in France and the UK. For France this ratio starts out at 50 percent and gradually declines to around 30 percent, while for the UK the asset intermediation rate plummets from 46 percent in 1982 to 35 percent in 1995. That is to say that on the aggregate level approximately half of all financial assets of the non-financial sector are stored with banks in Germany and this pattern did not change very much over time. In contrast, UK and French banks forfeited some of their importance as intermediaries of NFS assets as only a third of these are held with banks. In Hackethal (2001) additional empirical evidence is provided for the US and Japan on this measure. Results underpin the traditional claims as for the former bank intermediation is low, reflected by a ratio of 28 percent in the early 1980's decreasing to a low of 19 percent at the end of the 1990's. Contrary to this ratio indicating a market-based system Japan's ratio starts

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<sup>4</sup> In this context, disintermediation refers to changing institutions performing the channeling task. The next subsection deals with an alternative definition of disintermediation.

<sup>5</sup> NFS are households, enterprises and the public sector. Intra-sector flows, e.g. a bank lending funds to another bank are netted out.

out at 69 percent and stays despite substantial reduction still with 55 percent the highest among industrialised economies.

On the liability side of NFS the intermediation ratio also remained constant in Germany at approximately 57 percent. In contrast, both the UK and France started out somewhat below this ratio but saw a substantial decline to approximately 41 percent in 1995. Thus, the major share of borrowed funds employed in the NFS in Germany appears to come ever since from banks instead of NBFIs. Regarding the employment of banks as intermediaries in the US and Japan, Hackethal (2001) reports similar findings as with the asset intermediation rate. The liability intermediation ratio starts out with 69 and 25 percent, respectively, and declines to 61 and 5 percent at the end of the last decade.

We can therefore summarise that financial sectors can be described in a stylised way by the two polar cases of either a market- or bank-based system. It is important to note that any simplification comes at the cost of abstracting from more complex and mixed real-world settings. Nonetheless, Germany has been and continues to be well described as having a bank-based financial sector. While banks lost ground in all of the major economies this decline in importance has been less severe compared to other industrialised countries such as France and Japan. We cannot say which of the two options is better in a normative sense. Instead we restrict ourselves to acknowledge the persistent dominance of banks as preferred institutions in Germany.

## 2.2 Financial Patterns

We now turn from an institutional perspective to what the ECB (1999) calls an instrumental point of view. The main issue is to identify which financing patterns or instruments enjoy the highest popularity in the German financial system.<sup>6</sup> According to the taxonomy of Schmidt (2001) and Hackethal and Schmidt (2000) we are thus dealing with the sub-system of financial patterns. Herein, we focus on two aspects. Firstly, we look at the relevance of internal versus external finance for German firms. Secondly, we examine the degree to which securitisation replaces the traditional means of bank finance, i.e. taking deposits and granting loans.

We start by offering some orientation as to the balance sheet structure of German firms. Occasionally, the Deutsche Bundesbank provides data on corporate firms' balance sheets.

Two issues in Table 2 are worth noting. First, the structure of total bank debt to total assets is fairly stable at around 20 over time. Thus, there appears to be little evidence at first sight that any particular disintermediation trend materialised during the 1990s. Given the fairly high residual positions for both short and long term borrowing, one might suspect that these positions contain securitised debt, such as commercial paper or bonds. However, the by far most important item in the residual positions are participations of affiliated companies and the

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<sup>6</sup> Thus, while disintermediation in the previous section would imply a decline in the importance of banks as institutions it is here the switch from loans and deposits as means of exchanging funds towards securities.



share of securitised debt is negligible.<sup>7</sup> Second, the share of equity is surprisingly high and the popular claim of Germany being bank-based is at this stage at least not apparent.<sup>8</sup>

*Table 2: Balance Sheet Structure of the German Corporate Sector*

	1994	1996	1997	1998 <sup>1)</sup>	1999 <sup>1)</sup>	2000 <sup>1)</sup>	2001 <sup>1)</sup>
<b>Equity</b>	<b>16.6</b>	<b>16.9</b>	<b>17.4</b>	<b>17.6</b>	<b>17.5</b>	<b>17.2</b>	<b>17.6</b>
Capital	9.0	8.6	8.5	8.3	8.0	7.9	8.0
Reserves	7.6	8.3	8.9	9.3	9.5	9.3	9.7
<b>External funds</b>	<b>83.0</b>	<b>82.6</b>	<b>82.1</b>	<b>81.9</b>	<b>82.0</b>	<b>82.3</b>	<b>81.9</b>
<i>Debt</i>	<i>62.9</i>	<i>62.3</i>	<i>62.0</i>	<i>62.2</i>	<i>62.4</i>	<i>62.7</i>	<i>62.0</i>
Short term	45.7	45.2	45.1	45.0	44.9	46.5	46.2
Banks	9.2	9.3	9.4	9.6	9.5	9.6	9.7
Advances	7.0	6.7	5.9	5.6	5.9	5.5	5.5
Trade credit	14.2	13.8	13.8	13.1	12.6	12.8	11.9
Other	15.4	15.4	16.0	16.6	16.9	18.7	19.2
Long term	17.2	17.1	16.8	17.2	17.5	16.1	15.8
Banks	11.1	11.0	10.9	11.3	11.6	10.9	10.5
Other	6.1	6.1	5.9	6.0	5.9	5.3	5.2
<i>Provisions</i>	<i>20.1</i>	<i>20.3</i>	<i>20.2</i>	<i>19.7</i>	<i>19.6</i>	<i>19.7</i>	<i>19.9</i>
Pensions	7.7	8.1	8.1	8.1	8.2	8.3	8.4
Other	12.4	12.3	12.1	11.6	11.3	11.3	11.4
<b>Accruals</b>	<b>0.4</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>
<b>Total liabilities</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Notes: Numbers for 1995 not available. Including all corporations listed with German tax service

<sup>1)</sup> Adjusted results according to the tax revenue statistics of the Federal Statistical Office, base year 1997.

Source: Deutsche Bundesbank (2001b).

Furthermore, it seems that corporates rely to quite some extent on trade credit and other funds received from customer relationships, such as received advances. This is in line with findings of Berger and Udell (1998) who also report results for small corporations in the US that emphasise the importance of trade credit as source of funds. In fact, the two issues pick up the questions raised above, do firms fund their operations internally or externally and what financial products do they utilise to do so?

In dealing with the first question a study by Mayer (1988) sparked a series of analyses on the sources of finance for firms.<sup>9</sup> As was already mentioned in a comment on the original pa-

<sup>7</sup> At the time of writing the statistical department of the Deutsche Bundesbank is adjusting corporate balance sheet statistics to include this position explicitly. To our knowledge the share of participations among the sum of both “other” positions amounts to roughly 85% while bonds hover around a mere one percent share, exhibiting little changes throughout time.

<sup>8</sup> However, available data for the year 2000 only highlights substantial fluctuations across legal forms (Deutsche Bundesbank 2003). Especially the preferred legal form of SME’s, sole proprietorships, exhibits a far higher dependence on bank credit compared to the overall mean.

per by Barroux (1988) a major improvement of this and following studies was the use of the so-called flow-of-funds approach. Contrary to the simplistic approach to evaluate the sources of finance by means of stock variables, i.e. the balance sheet structure at a given point in time as in Table 2, the virtues of this approach are twofold (Hackethal and Schmidt, 2004). First, flow-of-fund data suffers to a lesser extent from accounting rules compared to balance sheet, i.e. stock data, thereby enhancing comparability across financial systems. Secondly, national account statistics provide information of (net-)flows from one sector to another, thereby covering all enterprises of an economy and reducing the cost of collecting firm-level data for cross-country comparison substantially.

The results of Corbett and Jenkinson (1997) according to this approach confirm the importance of internal finance. For all countries in their study, i.e. Germany, Japan, the UK and the US, they find that retained earnings account for 79, 70, 93 and 96 percent of physical investment, respectively.<sup>10</sup> This indicates that the findings above are fairly robust and suggests that external, and thus bank finance is of much less importance compared to conventional wisdom. More timely evidence provided by Hackethal and Schmidt (2004) for Germany, the UK and the US draws similar conclusions. Therefore, it seems implausible to claim that Germany is a bank-based financial system on this observation alone.

The second question is then what debt composition corporates chose for their external funding. The degree to which firms rely on bank finance differs markedly between countries. The above mentioned study finds clear support for the bank-based character of Germany as far as alternative source of external finance are concerned.

*Table 3: Sources of External Funds (1970-2000)*

	<b>Germany</b>	<b>Japan</b>	<b>US</b>
Long-term bank loans	76	78	18
Long-term loans NBFI	10	8	35
Bonds	8	9	35
Equity	7	5	11

Source: Hackethal and Schmidt (2004)

Compared to the US, both Japan and Germany rely heavily on banks with regard to their long-term finances. Table 3 depicts the average composition of external funding and also illustrates that securitised debt, i.e. bonds, enjoy considerable higher attraction among US corporate finance officers. In terms of raising equity in stock markets the results underpin that German (and Japanese) firms are tapping capital markets to a far lesser extent than their Anglo-Saxon competitors. This result is in line with Herrmann's (2001) argument that the average firm size in Germany is fairly small ("*Mittelstand*").<sup>11</sup> Then, the lack of observing firms using stock or debt market as source of financial funds just reflects their inability to do so due to too small operations rather than their unwillingness.

<sup>9</sup> Contributions including German data were in particular Edwards and Fischer (1994) and Corbett and Jenkinson ((1996), (1997)).

<sup>10</sup> These ratios are averaged over the period 1970-1994.

<sup>11</sup> See the monthly report of the Deutsche Bundesbank (2001b) for statistics on corporate balance sheet according to industry and legal incorporation.

However, financial innovations increasingly fostered the development of new products, which in fact could have caused just recently firms to increasingly rely on securitised debt. But Siebert (2004) cites the annual report of the Bank of International Settlements which reports the ratio of aggregate bank lending to non-financial firms relative to the sum of this position plus securities issued by corporations, i.e. funds raised in equity and debt markets.

*Table 4: Corporate Credit versus Capital Market Funding*

	1996	1997	1998	1999	2000	2001	2002
<b>Germany</b>	94	95	96	96	96	96	na
<b>Japan</b>	69	68	70	67	68	66	64
<b>UK</b> <sup>1)</sup>	70	71	68	64	64	63	63
<b>US</b> <sup>1), 2)</sup>	47	47	46	46	45	45	42

<sup>1)</sup> First quarter averages. — <sup>2)</sup> Excluding mortgage credit.

Source: BIS (2003) in Siebert (2004)

Table 4 depicts the development of this ratio for Germany and our preferred peer group. During the second half of the 1990s it is plain to see that Germany and the US constitute polar cases when it comes to the choice of their preferred vehicle for external finance. While according to this ratio bank funding is in Germany approximately twice as important as market funding, the US, and to a lesser degree the UK and Japan, rely on much more diversified sources of finance.

On balance, the results lend *conditional* support to describe the German financial arena as a bank-based system. Bank loans do not represent the prime source of funding to German firms. Both, historically and compared to other industrialised countries it is evident that corporates rely mostly on internal rather than external funds. However, we find in as much support for this claim as for external funding, bank credit continues to constitute the first choice for Germany's CFO's. How much of the stylised fact "capital market abstinence" is attributable to preferences contrary to the existence of potential entry barriers is unclear. But the matter of the fact is that even lately no deviance from bank credit can be found while such securitisation tendencies seem to be much more of an issue for all three peer economies. A potential explanation for this phenomenon could rest in what has become coined "relationship banking". Let us therefore turn next to the role banks play that goes beyond pure lending business – their role in Germany's corporate governance mechanism.

## 2.3 Corporate Governance

The subsystem of corporate governance deals with the issues of decision-making and control among agents in an economy. Siebert (2004b) examines aspects of corporate governance in Germany's social market economy. The study discusses decision and control mechanisms at, for example, universities, federal and state governments, banks and non-financial firms. This underlines the variety that research in this field allows for.

One catch phrase frequently encountered in the context of corporate governance discussions involving German banking is a term coined “relationship banking”. In this subsection we clarify what this term exactly means.<sup>12</sup>

According to Elsas and Krahnen (2004) the term relationship banking conveys that firms and banks maintain close ties and both intense and frequent interactions beyond the sheer bank business of granting credit and offering transaction and custody services. They state that

*“[...] bank-firm relationships in Germany are not only characterised by long-term debt financing commitments but also by a multitude of links. These include direct shareholdings, board representations, and proxy voting and are particularly significant for corporate governance.”*

Accordingly, Agarwal and Elston (2001) note that banks can influence corporates by means of lending and participation relationships, through potentially directly influencing management via representation on the board and through accumulation of proxy votes due to equity under custody management on behalf of bank customers.<sup>13</sup>

The core question is then of course what arrangement currently prevails and whether or not the prevailing arrangement is beneficial for firms and thus the economy. We therefore turn next to the implications of each of these three sources of influence on firm-performance.

### 2.3.1 Cross Holdings

Siebert (2004a) notes that banks own an extensive share of firm equity directly. According to van der Elst (2001) banks held approximately 14 percent of all shares of the corporate sector at the end of the 1990's.<sup>14</sup> Schroeder and Schrader (1998) confirm this magnitude and add that dispersed ownership in general is rare among German firms. According to them, the major reason for this finding is a comparably underdeveloped financial market and the lack of many, large institutional investors, such as mutual funds in the US or the UK. At the same time banks are not only shareholders but at the same time lenders to firms. As noted above, especially SME's depend to a substantial extent on long- and short-term bank loans as means of financing. Thus, this entrenchment might cause conflicts of interest to arise when it comes to discipline the management of a firm.

Two opposing views exist as to what enforces management discipline. On the one hand Manne (1965) argues that if a market for corporate control exists than management teams are competing for the control of assets. Then, capable managers replace incumbent ones if equity can be taken over in a hostile fashion in well-developed capital markets. This threat disciplines management to adhere to shareholders interests.<sup>15</sup> This view has been opposed by Cable (1985), Mayer (1988), and Shleifer and Summers (1988), among others. The former study emphasises the requirement of an efficient sanctioning mechanism of markets that depends crucially on perfect information. However, if information asymmetries exist -as the latter two

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<sup>12</sup> The focus on the German state of affairs results from the broadness of the issue. We refer to alternative arrangements only occasionally.

<sup>13</sup> Recent surveys on the theory of relationship banking are for example Boot (2000), Ongena and Smith (2000) or Elsas et. al (2004).

<sup>14</sup> This share is increased to ~23 percent for banks and insurances together.

<sup>15</sup> Obviously, this would reflect the US and UK stance towards corporate governance mechanisms largely relying on market forces.

analyses argue- long-term relationships can overcome these asymmetries and help to form implicit contracts.<sup>16</sup>

It is more or less beyond doubt that hostile takeover bids of an Anglo-Saxon style are virtually absent from the German corporate arena (Franks and Mayer, 1990, Edwards and Fisher, 1994 and Schmidt, 2004). However, this does not imply that there is no market for corporate control at all. Jenkinson and Ljungqvist (2001) provide evidence that raiders accumulate hostile stakes, i.e. sufficiently high stakes that can be used to block decisions. Interestingly, their results pertain that banks play a prominent role in helping acquirers to accumulate these block holdings and not having to disclose them. This result is confirmed and further detailed in a study by Boehmer (2000). He finds evidence that the few takeovers that do occur increase shareholder wealth. Regarding the role of banks he sketches a mixed picture. The most successful transactions, in terms of shareholder wealth generation, were those where (i) the bidder firm was subject to a block holding below 50 percent and (ii) a bank was also a shareholder and (iii) the bank did not hold the largest stake. Boehmer concludes that having a bank on board enhanced the decision as to which and how to acquire a target. However, his findings also identify those deals as worst in class, where the bidder was controlled by banks. Thus, his conclusions pose a counter view to the reduction of transaction and information cost arguments raised above.<sup>17</sup> Wenger and Kaserer (1998) draw even more drastic conclusions on the basis of two infamous corporate failures and an empirical investigation of the relation between bank involvement and firm performance.<sup>18</sup> According to them large German banks are “[...] sheltered from outside pressures that would force them to pursue a value maximizing investment and monitoring policy” (p. 75). A less normative view is presented by Agarwal and Elston (2001), who find evidence that intense bank-firm relations facilitate access to funding, especially for SME, but cannot confirm any positive relation between equity stakes of banks and the performance of firms.

On the other hand more recent studies than that of Cable (1985) are Lehmann and Weigand (2000) and Gorton and Schmidt (2000). Both find that while intimate ties undoubtedly exist they do not hamper firm performance and thereby shareholder's interests. On the contrary, these analyses find a significant coefficient for equity control rights of banks on various measures of firm performance such as return on assets, return on equity or Tobin's Q.

On balance it appears that in Germany the market for corporate control is not an external, visible one as in the Anglo-Saxon model. Instead it is an internal system in which banks rather than markets play an important role to facilitate implicit contracts to overcome information asymmetries arising due to agency problems. The evidence as to the costs and benefits of this arrangement is mixed. As noted in Elsas and Krahnen (2004) the distinction of small and medium firms versus samples focusing on large stock-listed corporations matters a lot. While the evidence lends credit to the hypothesis that bank's privileged position as simultaneous owners and lenders induces rent seeking (Siebert, 2004a and Agarwal and Elston, 2001) one has to note at the same time that this dual role hardly applies to SME's. Here, banks serve primarily

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<sup>16</sup> As a side note, the German codetermination principle grants employees a substantial say in the management of the firm. One could evaluate this to reflect that Germany's institutional setting is characterized by engaging in longer-term commitments to minimize, in terms of Cable (1985), information and transaction cost (see also Sinn, 2004b, for an alternative view of codetermination).

<sup>17</sup> Similar evidence on the existence and mechanisms of block holdings is also provided by Franks and Mayer (2001).

<sup>18</sup> Wenger and Kaserer (1998) illustrate as cases the near-failure of Metallgesellschaft in 1993 and the ongoing value destruction at Daimler Benz between 1987 and 1995, according to them 36 bn DEM compared to a diversified investment, without sanctioning of the management.

as a long term lender only ("*Hausbank*", see Elsas and Krahnen, 2004) and also support the firm under adverse conditions (Schroeder and Schrader, 1998). Let us consider next how banks can influence firms more directly by representation on the firm's board.

### 2.3.2 Two Tier System

To do so it is worthwhile to briefly sketch the organisation of German firms. Schneider-Lenné (1992) illustrates the three organisational entities that govern joint-stock companies ("*Aktiengesellschaft*" or "*AG*").<sup>19</sup> The first layer is the board of managing directors ("*Vorstand*"), which conducts daily operations on behalf of the owners. The second layer refers to the controlling body, namely the supervisory board ("*Aufsichtsrat*").<sup>20</sup> The supervisory board appoints the members of the board of managing directors. In addition, members have full access to the firm's books. They obtain veto rights to block certain management decisions and the board of managing directors has to report regularly on business strategy and profitability. The general or shareholder meeting ("*Hauptversammlung*") is the representation of owners of the firm and thus holds the ultimate right of control. The shareholder meeting is regularly convened by the management board and has to be announced in the public gazette (Baums, 1998). The invitation has to be accompanied by an agenda of items upon which the shareholder meeting should vote. Shareholders commanding a share of 5 percent or larger can request an extraordinary meeting if deemed necessary. Also, they can file counter proposals, which have to be included in the agenda as well and are made publicly available.<sup>21</sup>

De facto, only little operational decision making is conducted by the shareholders. The brunt to discipline and monitor management traditionally rests with the supervisory board. However, the views on how large this body's impact is, differ.

For example, Schroeder and Schrader (1998) argue that neither the legally required minimum of two annual meetings, nor the average of four annual meetings allow extensive opportunities to influence management decisions. Also, the Joint-Stock Corporation Act explicitly prohibits the supervisory board to assume management tasks (§111(1) *Aktiengesetz*). Furthermore, Schneider-Lenné (1992) notes that the single-most important source of information of the supervisory board is the management. While the law might empower the supervisory board with a right for information, the quality of this information flow could be poor. Thus, an evaluation of the company's state of affairs crucially hinges on how much and how good the diffusion of knowledge is. An opposing view is presented by Siebert (2004a), who asserts that members of the supervisory board are usually "insiders" that are well informed and have the means to actively influence the management board. Is then bank representation a myth or a fact in Germany's corporate sector? And if it is how does it influence firms?

As noted in Elsas and Krahnen (2004) it is important at this stage to distinguish between incorporated companies ("*AG*") on the one hand and SME's on the other. For the former it appears that banks hold a significant number of seats on supervisory boards (Edwards and

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<sup>19</sup> The legal foundations being found in the Joint-stock Corporation Act (*Aktiengesetz*) introduced for the first time in 1965.

<sup>20</sup> Important particularities in German law are far-reaching codetermination rules (Siebert, 2004b). In companies with more than 2,000 employees the co-determination act ("*Mitbestimmungsgesetz*") from 1972 requires half of the supervisory board to consist of representatives of the employees. Among this group, two third are from the firm's staff while the remaining third can be made up by trade union representatives outside the firm. The philosophy is to have suppliers of capital and labour steer the company jointly and cooperatively.

<sup>21</sup> Franks and Mayer (1990), however, point out that control may be limited in Germany, as firms have the opportunity to issue non-voting shares.

Fisher, 1994). Schneider-Lenné (1992) reports that for the 100 largest German companies out of a total of 1,496 supervisory seats 104 mandates accrued to representatives of commercial banks, a share of 7 percent.<sup>22</sup> According to the German Banker's Association, Bundesverband deutscher Banken (1995), this magnitude decreased slightly until 1993. Out of 1,561 seats only 99 were held by private bankers, which represents a 6.3 percent share. More recent data is provided by Siebert (2004a) and Seger (1997). The former reports that Germany's three largest banks held around 16 percent out of approximately 231 positions available among 24 non-financial firms listed on main the German stock index DAX 30 as of 2004.<sup>23</sup> The latter study refers to a sample compiled by Seger (1997), which comprises 144 large German firms in 1990.<sup>24</sup> In this sample 70 percent of firms have a bank representative on their supervisory board. Despite the unavailability of more up to date data it appears that bank representation in firm's central control body is a fact in Germany. For SME hard evidence is naturally even less accessible (Elsas and Krahnen, 2004). This is partly explained by the reduced disclosure requirements of limited liability companies ("*Gesellschaft mit beschränkter Haftung*" or "*GmbH*"), limited partnerships ("*Kommanditgesellschaft*" or "*KG*") and sole proprietorships, where the former two legal forms account for approximately one third of the number of German firms and the latter for two thirds. In these incorporations no body such as the supervisory board at an AG exists and Elsas and Krahnen (2004) therefore conclude that

*"When non-listed firms are taken into consideration [...] bank influence via direct equity holdings, supervisory board representation, and proxy-voting rights can easily be ignored."*

Edwards and Fischer (1994) and Elsas and Krahnen (1998) concede that for the group of SME's the role of banks is much more that of a *Hausbank*, i.e. that of a provider of long-term financier. In sum, we concede that bank representation on supervisory boards is a fact for large firms while direct influence of banks on SME only exists to the extent of a present *Hausbank* relationship.

What then is the influence of this insider corporate governance structure on the performance of firms? As noted by Siebert (2004a) especially for large companies bankers tend to be elected to multiple supervisory board memberships.<sup>25</sup> This might lead to poor fulfilment of their duty of care obligation and might even cause violation of a board member's duty of loyalty. On the other hand bank representatives are useful in this position for their financial and business expertise. Schneider-Lenné argues that the role of these representatives increasingly is the counselling and advise of the management board, which is according to her demanded by corporate officers. Arguments in favour of intimate ties between banks and firms are that an implicit contract between relationship lenders and firms allow for contractual flexibility (Boot et al., 1993), implies a long term commitment of the lender thereby inducing him to

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<sup>22</sup> Note, that the German Co-Determination Act mentioned previously stipulates that halve of these seats are assigned to labour representatives and thus only 748 seats were theoretically available anyway.

<sup>23</sup> These banks are Deutsche Bank, Dresdner Bank and Commerzbank.

<sup>24</sup> The data's age is due to the necessity to manually collect this (and further) information (on proxy voting) from the shareholder meeting minutes.

<sup>25</sup> See Wenger and Kaserer (1998) for a brief collection on quotes from then Deutsche Bank CEO Hilmar Kopper who states that he is not suffering from any excessive burden due to too many supervisory board positions as he does not control the respective firms but rather is a quiet shareholder.

gather more extensively about the borrower (Greenbaum and Thakor, 1993) and allows for intertemporal transfers given the long-run nature of the relation (Allen and Gale, 1999).

The empirical evidence as to the effects of bank representatives on supervisory boards on firm performance does not lend credit to these arguments. For example, Wenger and Kaserer (1998) examine a sample of 51 non-financial corporations between 1973 and 1993. They find no significant relation between the two.<sup>26</sup> Similarly, Lehmann and Weigand (2000) find for the years between 1992 and 1996 for 361 firms also no significant relation between this measure of bank influence and return on asset. Seger (1997) examines 144 large German firms in the period 1990-1992 and even finds a negative relation between a higher supervisory board representation and various profitability measures. Gorton and Schmidt (2000) provide an estimation that explains that supervisory board membership is actually determined by direct equity holdings. Hence, they conclude, representation follows from these direct participation and effects on firm performance are therefore captured by this variables. With respect to the role of bank representation among SME we already stressed the different corporate governance structure of firms not incorporated as AG. Empirical evidence examining these relations is rare due to the lack of publicly available data. An exemption is Elsas and Krahnen (2004) who employ survey data. Their findings suggest that banks indeed enter into intense *Hausbank* relationship lending with SME. While no conclusions on the bank-firm performance relationship are drawn the authors find evidence that SME with closely tied banks enjoy easier access to funds also in times of distress.<sup>27</sup> Let us turn next to the final major way how banks have an influence on corporate governance in Germany's financial system.

### 2.3.3 Proxy Voting

Siebert (2004a) points out that not only lending, direct equity stakes and membership on supervisory boards are channels how banking firms influence decision-making and control of corporate firms in Germany. Baums (1998) explains that under German law shareholders can waive their right to vote during the shareholder meeting to virtually anybody.<sup>28</sup> As pointed out by Schneider-Lenné (1992) and Schroeder and Schrader (1998) this does not imply some automated empowerment of banks to assume voting power from their custody customers. Instead, the bank has to fulfil a number of information obligations and collect the explicit assignment from the shareholder to, first, exercise her voting right and, second, clearly express as to how the bank will vote if no specific preferences of the shareholder with regard to the agenda items are indicated. Baums (1998) notes that it is commonplace, especially for smaller shareholders, to pass this right on to their custodian bank.

As noted by Prevezer and Ricketts (1994), banks might thereby accumulate block holdings and exert de facto influence on management decisions at shareholder meetings. The opportunities and threats are virtually the same as outlined in the previous subsections.<sup>29</sup> Therefore, we restrict ourselves in this subsection to (i) assess in as much the claim that banks potentially

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<sup>26</sup> However, we caution that most of their empirical arguments rest on an estimation with poor fit and by and large insignificant coefficients.

<sup>27</sup> The access to capital result is also obtained by Agarwal and Elston (2001), however, they also find that these firms pay higher interest payments and do not enjoy systematically better performance. They conclude that relationship banking fosters rent-seeking by banks.

<sup>28</sup> However, physical presence is required.

<sup>29</sup> That is, the conflict of interest versus alleviation of information asymmetry argumentation, respectively.



possess proxy power holds and (ii) review the empirical findings in the literature as to how this pattern influences firm performance. To this end consider Table 5 below.

*Table 5: Equity Held with Banks According to Depositor Group*

Year	Bank holdings	Equity deposited with banks from:								Rest
		<i>TOTAL</i>	<i>Private</i>	<i>NPO</i> <sup>1)</sup>	<i>Funds</i>	<i>Insurance</i>	<i>Corporate</i>	<i>Public</i>	<i>Foreigners</i>	
1990	9.4	52.3	13.8	0.7	3.3	2.7	17.6	3.5	10.6	38.3
1991	9.6	51.8	13.3	0.7	3.8	3.4	17.4	3.3	10.0	38.6
1992	9.8	51.2	12.7	0.7	4.2	4.2	17.1	3.1	9.1	39.1
1993	9.1	55.0	14.7	0.7	5.1	4.4	17.6	2.8	9.7	35.9
1994	8.4	54.8	13.6	0.7	5.4	4.6	17.4	3.3	9.8	36.9
1995	8.7	49.8	12.1	0.7	5.5	4.6	16.3	2.4	8.3	41.5
1996	9.5	51.9	12.4	0.7	5.5	5.0	16.5	2.3	9.4	38.6
1997	8.9	55.4	11.9	0.8	6.3	6.1	18.0	1.7	10.6	35.7
1998	8.6	57.5	12.1	0.9	6.5	8.6	17.1	1.7	10.5	34.0
1999	9.1	63.0	12.5	0.9	5.8	5.2	24.9	1.1	12.6	27.9
2000	8.4	63.4	13.2	0.9	4.7	4.7	24.3	1.1	14.5	28.2
2001	7.5	63.4	11.7	0.9	4.5	4.6	23.2	2.1	16.4	29.2
2002	7.5	54.2	10.5	1.3	4.4	3.9	17.8	2.2	14.0	38.3

Note: All number in percentages.

<sup>1)</sup> NPO: Not for profit organisations.

Source: Deutsche Bundesbank (2003).

All shares in Table 5 depict the percentage of total circulating stock issued by domestic firms at year-end. The residual position contains primarily equity held abroad. While the share of direct stakes declined over time the share of securities held on behalf of bank customers constantly increased until the stock market crash, amounting to an still impressive 54 percent at year-end 2002.<sup>30</sup> This suggests that banks might indeed have considerable opportunities to greatly expand their influence on decision-making.

Evaluating these descriptive statistics, however, it should be borne in mind that Table 5 depicts shares of custody securities *aggregated* across multiple banks. Therefore, even when banking firms receive by and large unanimously proxy votes from their customers, they still would have to collude among each other to practically form block holdings.

The unavailability of data on proxy voting implies that only few empirical studies exist in this field. Two examples are Gorton and Schmid (2000) and Seger (1997). Both studies find a positive relation between firm-performance and high proxy voting of banks. Thereby, these studies lend credit to the hypothesis that bank's expertise helps to improve decision-making.

<sup>30</sup> Note, that the share of NBFI is fairly small at around 8.5 %. Thus, even under the assumption that these "professionals" do not waive their voting rights the influence of banks potentially exerted by proxy votes is approximately inflated by factor seven compared to direct stakes only.

## 2.4 The Role of Banks in the German Financial System—Summary

From the assessment of three major building blocks of Germany's financial system we can draw one major conclusion. Banks used to, currently do and presumably will continue to play at least in the medium run a pivotal role in channelling funds from surplus to deficit units.

This conclusion emanates, first, from the institutional perspective. Banks provide more loans to non-financial sectors when compared to three major economies. Capital markets, both debt and equity, are of lesser importance and received only at the turn of the millennium some attention comparable to that of the UK or the US. Second, the instrumental point of view underpins that German corporations do prefer primarily internal funds. As far as external finance is demanded, these firms draw heavily on long-term bank debt to fund their operations. While this result is of lesser relevance for large companies this is particularly true for SME. Thirdly, the corporate governance system in Germany assigns a more prominent role to banks than it does to markets in order to discipline management.

In all three subsystems the empirical evidence as to whether the prevailing pattern can be judged as “good” or “bad” is mixed. Therefore, we would like to note that this descriptive analysis of the German financial system should certainly not be used to infer normative judgements on the role of banks. Instead we leave this question aside and assert at this stage that banking in Germany deserves particular attention.

We therefore turn in the next subsection to the regulatory and supervisory environment in which banks conduct their operations before drilling deeper into the banking industry's structure and performance.

## 3 German Bank Regulation and Supervision

In this section, we discuss banking regulation and supervision in Germany in its current set up. We start by briefly outlining the evolution up to the recent amendments of the Banking Act. We then introduce the current regulatory rules banking institutions have to comply with, before we present the distinctive supervisory framework in Germany. Additionally, we discuss potential changes as set out under the proposals of the Second Basel Accord. Finally, we describe the deposit insurance systems in Germany.

### 3.1 The Historical Perspective

Banking regulation and supervision in a historical perspective is a relatively recent phenomenon in Germany (see Table A1).<sup>31</sup> Only after the world economic crisis in 1929/30, banking supervision was formally established by way of a Board of Trustees headed by a National Commissioner of Banking (“*Reichskommissar*”). However, the primary task of the newly established supervisory body was to deal with the general banking crisis at that time. It was only in 1935 that the German Banking Act (“*Kreditwesengesetz*”, KWG) came into force and provided the legal framework for banking supervision. At the same time, a Department for Banking Supervision under the auspices of the German Central Bank (“*Reichsbank*”) was established. After a revision of the Banking Act in 1939, the Department for Banking Supervision

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<sup>31</sup> However, capital regulation as compared to other industrialized countries has a long tradition in Germany dating back to the 19<sup>th</sup> century. See Fischer and Pfeil in Krahen and Schmidt (2004).

was dissolved and banking supervision was handed over to the Ministry of Economics. From 1948 to 1961, banking supervision in Germany rested in the hands of the Federal States, which exercised the respective functions together with their Landes Central Banks. With the Banking Act of 1961, responsibility for supervising banks was assigned to the Federal Banking Supervisory Office (“*Bundesanstalt für das Kreditwesen*”, BaKred). BaKred was set up as an independent supervisory federal authority reporting to the Federal Minister of Economics (since end-1972 to the Federal Minister of Finance) and commenced operations in January 1962. With the implementation of European and International Banking Regulation, the German banking law has undergone rapid change. Since the 1980’s, the German Banking Act has been amended six times mainly incorporating EU Directives into German national law but also as reactions to failures of the regulatory framework (see Table A1).

## 3.2 Regulatory Framework

### 3.2.1 *The Banking Act*

The Banking Act has been the legal basis for the supervision of banking business and financial services in Germany. This Act aims at protecting creditors in order to safeguard their confidence and hence, to stabilise the banking system. It tries to pay due regard to free market principles, i.e. the entire responsibility for business decisions rests with the management of banks. Hence, the qualitative and quantitative rules are formulated in the most general form possible and contain the obligation for banks to open their books to the supervisory authorities.

The Banking Act basically entails the rules that have to be complied with when setting up banks and carrying out banking business. The liberalisation of the financial markets has created new business opportunities for banks which can significantly increase their risk. In order to account for these new risks, the Banking Act of 1961 has been amended several times.

The second amendment in 1976 was implemented as a reaction to the failure of Bankhaus Herstatt as consequence of a large position in foreign exchange. The amendment thus aimed at the tightening of large exposure rules and introduced rules that tied foreign exchange positions and positions in precious metals to capital. Furthermore, the supervisory power of the BaKred was strengthened via authorising onsite inspections without specific cause and by defining limits on losses that lead to the mandatory closure by the BaKred.

The third amendment in 1985 incorporated the 1<sup>st</sup> EC Directive into German Law. The content of the directive aimed at the prevention of the credit pyramids which banks build up with the help of their subsidiaries without any commensurate capital increases. Supervision thereafter focused on individual banks as well as on consolidated banking groups. An additional modification of the Banking Act followed after the near failure of Bankhaus Schröder, Münchmeyer and Hengst in 1983. The Bankhaus suffered large losses from lending to a single large borrower. As a response large exposure limits were reduced from 75 to 50 percent of capital.

The fourth amendment in 1993 implemented the EC Own Fund Directive and the Second Banking Directive. The implementation of the solvency requirement as worked out under the first Basel Accord, came along with a harmonisation of banking supervision via the introduction of the principle of home country supervision and the single bank license as a so called “European passport” which permitted banks with a license in a member country of the European Economic Area (EEA) to do business anywhere in the EEA.

The fifth amendment in 1995 implemented the Second EC Consolidation Directive and the EC Large Exposure Directive.

In 1998 the sixth amendment implemented three European Directives namely the Investment Services Directive, the Capital Adequacy Directive and the so-called Post-BCCI Directive. Particularly, the Investment Services Directive harmonised the supervision of investment firms and credit institutions. Previously, investment firms were subject to only limited supervision. The Capital Adequacy Directive harmonises the own funds requirements for the assumption of market, free delivery, settlement and large exposures risks associated with carrying out transactions in financial instruments (securities, derivatives etc.). For the purpose of these positions, the concept of "trading book institution" was introduced into the Banking Act. Thus, only these institutions are affected by the sixth amendment of the Banking Act with respect to market and large exposure risks. Trading book institutions are institutions which take on proprietary positions, regardless of whether or not this is done as a service for third parties. Hence the trading book is deemed to include all proprietary positions in financial instruments, marketable assets and equities taken on by the institution with the intention of profiting in the short term from price variations and differences between buying and selling prices.<sup>32</sup>

The Banking Act stipulates a number of measures related to the risk, liquidity, and concentration of a bank's portfolio. In the following sections, we consider the regulatory rules focusing on the solvency requirement (Principle I), liquidity requirement (Principle II), limits on large credit exposures as well as the €1.5 million credit register.

### *3.2.2 Solvency – Principle 1*

Principle 1 regulates the amount of capital banks have to hold relative to the risks of their portfolio. The guideline closely follows the 1988 Basel Accord which has been transformed into the EC Own Fund Directive and EC Solvency Directive.

Principle 1 distinguishes between counterparty and market risk. The latter includes interest rate risk, currency risk, commodity risk as well as share price risk. Currently, counterparty and market risk is treated differently. The differential treatment of market and counterparty risk will change with the introduction of the New Basel Accord. Currently, however, the Banking Act distinguishes between trading- and non-trading book institutes. For non-trading book institutions, there are so far only standard procedures for the computation of counterparty and market risks available. In contrast, trading-book institutions are permitted to evaluate market risks using bank internal models after being given regulatory approval. For negligible trading book positions, banks are allowed to include these positions in the calculation of counterparty risk.

Principle 1 stipulates that counterparty and market risk must be backed by own funds. Table 6 shows the computation of own funds under principle 1. Counterparty risk must be backed by core (tier 1) and supplementary capital (tier 2) while market risk positions may partly be backed by tier 3 capital (see Table 7 for the definition of the different capital classes). Additionally, supplementary capital is limited to the amount of core capital. Also, liabilities which count as supplementary capital such as long term subordinated liabilities and uncalled com-

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<sup>32</sup> Institutions with negligible trading book business are not required to comply with the trading book provisions. In this case, the banking book provisions apply to positions which actually should be included in the trading book. This exemption is subject to the condition that the trading book business does not normally exceed €5m and €15m of the institution's total on and off-balance-sheet business, respectively, and never exceeds €6m and €20m.

mitments of members may not exceed 50% of core capital.<sup>33</sup> The usage of tier 3 capital is limited to 2.5 times free core capital.

*Table 6: Computation of Own Funds for Principle 1*

	Core capital
+	Additional capital (first and second class)
-	Deductions pursuant to section 10 (6) BA
=	Liabe Capital pursuant to section 10 BA
-	Qualified participating interests pursuant to section 12 BA
-	Overshootings of large exposure limits pursuant to sections 13, 13a, 13b, BA
=	Liabe Capital for the purposes of Principle 1
+	Tier 3 capital used for backing market positions
=	Own funds used for backing of Principle 1

Source: Deutsche Bundesbank, [www.bundesbank.de](http://www.bundesbank.de)

*Table 7: Definitions of Tier 1—3 Capital*

Core Capital (Tier 1)	Supplementary Capital (Tier 2)	Tier 3 Capital
- paid-up capital	- provident funds	- Net profits
- open reserves	- preferential shares	- Short-term subordinated liabilities
- net profits	- contingency reserves	
- contributions to capital by silent partners	- unrealised reserves	
	- capital surplus	
	- Longer-term subordinated liabilities	

Source: Deutsche Bundesbank (2004a).

In order to calculate the adequacy ratio, own funds under principle 1 are weighted by risk weighted assets (RWA). The procedure comprises two steps. First, bank assets are allocated to their specific risk weight which range from 100 to 0.<sup>34</sup> These RWA are then used in the denominator to weigh own funds. The resulting capital adequacy ratio must exceed the minimum of 8%.

The assumption underlying the risk weights is that each risk weight represents the default probability of the counterparty. Assuming well-diversified loan portfolios, poorly assessed default probabilities for individual counterparties do not matter. Due to the diversification effect

<sup>33</sup> Banking Act section 10

<sup>34</sup> Risk weights are 0%, 10%, 20%, 50%, 70% and 100% with a preferential treatment for OECD countries

the *portfolio* probability of default should not be affected significantly by individually mal-estimated default probabilities. However, empirical evidence suggests that the risk weights of Basel I are too crude to reflect the underlying risk correctly. For instance, Avery and Berger (1991) find that the capital requirements under Basel I explain only 5% of the banks' loan performance.

The principle applies to individual institutions as well as on a consolidated basis to groups of institutions.<sup>35</sup> Credit institutes are required to comply with principle I on a daily basis while they report information on the risk-weighted assets and own funds on a monthly basis and in greater detail on a quarterly basis.

The new Basel Capital Accord, known as Basel II, will bring about several changes to Principle 1. Basically, the risk-weights will depend more strongly on the underlying risks. We will not go further into detail, as the respective EU directive and the corresponding amendment of the Banking Act have not been finalised yet. This means that, while it is clear that the amended Principle 1 will closely follow Basel II, the exact details are not yet known.

### 3.2.3 Liquidity – Principle 2

The concept of Principle II is based on the assumption that the adequacy of an institution's liquidity is primarily determined by three factors: the size of the expected payment streams, a sufficient stock of liquidity in the form of highly liquid assets, and the refinancing lines in the money market.

The liquidity regulation contains two approaches for the measurement of the liquidity situation of an institution. The maturity mismatch approach (MA) and the stock approach (SA).

*Table 8: Liquidity Calculation According to Principle 2*

Example of computing liquidity and observation ratios

Payment means and payment obligations		overnight up to 1 month	over 1 month up to 3 months	over 3 months up to 6 months	over 6 months up to 12 months
		Maturity band			
		(I)	(II)	(III)	(IV)
A.	Sum of payment means	200	100	80	40
B.	Sum of payment obligations	160	180	60	80
C.	Maturity mismatch (A - B)	+40	-80	+20	-40
D.	Positive maturity mismatches	+40		+20	
E.	Sum of payment means (A + pos. mat. mismatch [D] from previous maturity band)		140 (100 + 40)	80	60 (40 + 20)
F.	Liquidity ratio (A / B)	(at least 1,0) 1,25			
G.	Observation ratios (E / B)		(no observation ratios available)		
			0,77	1,33	0,75

Source: Deutsche Bundesbank, [www.bundesbank.de](http://www.bundesbank.de)

Under the MA, liquid assets available at a given date (means of payment) are contrasted with the liabilities both on and off the balance sheet (payment obligations) in four different maturity bands according to their probable residual maturities. The four maturity bands confront assets and liabilities with residual maturities from one day up to a year. The first band comprises all assets within the short maturity range from one day to 1 month. Subsequent

<sup>35</sup> Deutsche Bundesbank (1985)

bands consider position with longer residual maturities (see Table 8 for details). The consequent differences between the asset and liability components (maturity mismatches) allow an overview of the likely future inflows and outflows of liquidity in the periods in question.

Additionally, under the SA, listed and specifically hedged securities are considered highly liquid assets (first maturity band, regardless of the underlying residual maturities) which can be liquidated at any time and so used for offsetting unexpected payment outflows. Given their liquidity these positions are included in the respective maturity band.

The combination of the two approaches ensures that an institution's liquidity risks are adequately recognised. Liquidity is considered adequate under normal circumstances when the means of payment available during the next calendar month at least cover the expected liquidity outflows during the same period

The Liquidity ratios, which have to be reported monthly, are given by the ratio of the available means of payment to callable payment obligations in the first maturity band. All 4 maturity bands have to be computed and surplus payments in one band may be carried over to the next longer maturity band. Table 8 gives an example for the computation of the liquidity ratios.

### *3.2.4 Large Exposure Limits and the Lending €1.5 million Credit Register*

Apart from limiting the risk and liquidity composition of bank portfolios via minimum solvency and liquidity requirements, the Banking Act also stipulates limits concerning the concentration risk of bank portfolios. It therefore sets limits to the size of exposures to a single borrower relative to banks' capital. Along these lines, large exposures are defined as any exposures to a single borrower or borrower unit equal or above 10 percent of liable capital. Single large exposures are limited to 25% of liable capital for the banking book and to 25% of own funds for the overall business trading book.

A further requirement has been set up for the reporting of large exposures. Banks are required to report all loans of €1.5 million or more to the Deutsche Bundesbank on a quarterly basis. The latter information on loans is collected in a special credit register which collates all bank loans to borrowers. The database enables supervisors to obtain an overview of borrowers' indebtedness and correspondingly informs banks on their request on the indebtedness of borrowers. This credit register represents an integral part of banking supervision in Germany.

## **3.3 The Institutional Environment**

The previous sections discussed the rules regulating the banking business and financial services. In this section, we focus on the current set up of banking supervision in Germany which serves to warrant that banks comply with the regulation and formalises procedures taken by the supervisory agencies in circumstances when a bank fails to comply with the regulation. Special attention is given to the division of supervisory activities between the Deutsche Bundesbank and the German Financial Services Authority (Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)).

### *3.3.1 Supervision*

In most countries, supervision is placed in the hands of a single institution, which in most countries is represented by the Central Bank, typically accountable to the Finance Ministry (Barth et.al 2001). In contrast, the supervisory regime in Germany does not share the first

characteristic but only the latter. There are two institutions responsible for banking supervision in Germany, namely the BaFin and the Deutsche Bundesbank.

It is the division of banking supervision between the supervisory agencies that characterises the supervisory framework of Germany. While the BaFin is responsible for formulating the general rules regulating banks and banking supervision, the Deutsche Bundesbank is responsible for the operational implementation.

Since the beginning of banking regulation in the 1930s, the Central Bank has traditionally played a great role in banking supervision. With the integration of all supervisory agencies in a single institution in 2002, the BaFin was created.<sup>36</sup> The involvement of the Deutsche Bundesbank in banking supervision can be rationalised by virtue of informational economies of scope between monetary policy and bank supervision. The extensive network of branches across Germany and the business relationships with banks provide the basis for the informational advantage of the Deutsche Bundesbank. The involvement of the Deutsche Bundesbank in banking supervision is legally formalised in section 7 of the Banking Act and the details are formulated in a memorandum of understanding between the BaFin and the Deutsche Bundesbank and further specified in the more recent supervisory guidelines.<sup>373839</sup>

However, while the Deutsche Bundesbank is responsible for the operational tasks under the guidelines of the BaFin, as specified under section 7 of the Banking Act, it cannot be argued that the Deutsche Bundesbank is subordinated to the BaFin. Instead, the BaFin formulates guidelines in agreement with the Deutsche Bundesbank.<sup>40</sup>

The tasks of the Deutsche Bundesbank within banking supervision are given by the following list:

- the issuing of general rules (such as principles and regulations)
- the process of ongoing supervision, with the exception of (sovereign) individual regulatory measures vis-à-vis institutions, which are reserved for the BaFin
- prudential audits
- international co-operation/co-ordination in the prudential field

On the other hand, the BaFin is responsible for:

- licensing
- monitoring
- closing of individual institutions
- issuing of general instructions for carrying out banking business, providing financial services and for limiting risks

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<sup>36</sup> The BaFin was created by the merger of the Federal Banking Supervisory Office, the Federal Supervisory Office for Insurance Enterprises, and the Federal Supervisory Office for Securities Trading.

<sup>37</sup> Agreement between the Deutsche Bundesbank and BaFin (2002)

<sup>38</sup> Deutsche Bundesbank (2004b)

<sup>39</sup> Bundesanstalt für Finanzdienstleistungsaufsicht (2003)

<sup>40</sup> If no agreement can be reached, guidelines will be pronounced by the Ministry of Finance after consultation with the Deutsche Bundesbank.



As a general rule of the Banking Act, the supervisory agencies do not interfere directly in the individual operations of financial institutions. In fact, it is the explicit aim of the Banking Act to leave the entire responsibility for the business operations to the managers of the financial institutions. Banking supervision restricts the activities of the financial institutions only by qualitative and quantitative general provisions and requires banks to open their books to the supervisory authorities. The intensity of supervision of the financial services institutions depends on the type and scale of the financial services provided.

In a situation when a credit institute violates any rule of the Banking Act, the Deutsche Bundesbank forwards the information to the BaFin. The BaFin then examines the forwarded information to formulate next steps to intensify supervision or necessary sanctions. The intensification of supervision of these problem institutions has to be in agreement with the Deutsche Bundesbank and may involve the setting up of joint supervisory teams. However, the Deutsche Bundesbank is not involved in the formulation of any regulatory actions but rather restricted to give recommendations for the speed of regulatory actions.

The BaFin has a range of measures to intervene when a bank fails to meet regulatory requirements or poses a threat to stability. Before these measures are applied, the institution is typically given time to correct the deficiency. Only thereafter may the BaFin issue one of the following measures:<sup>41</sup>

- prohibit or limit withdrawals by proprietors or partners, distribution of profits, granting of loans
- prohibition of voting rights, transfer of voting rights to trustee
- temporally ban sales and payments of the institution
- order the institution to be closed for business with customers
- prohibit the acceptance of payments
- prohibit managers from carrying out their business

Additional provisions have been set up for the case when financial difficulties of an institute endanger the national economy. Under these circumstances the Federal Government may grant an institution an extension of time to discharge their obligations during which any injunctions are not permitted.<sup>42</sup>

Section 7 of the Banking Act stipulates that the BaFin and the Deutsche Bundesbank shall co-operate in the ongoing process of monitoring of institutions. This process includes onsite as well as offsite supervision.

Offsite supervision involves the evaluation of documents submitted by institutions, auditors' reports pursuant to section 26 and the annual financial statements as well as performing and evaluating audits of banking operations with a view to assessing the adequacy of institutions' capital and risk management procedures, as well as appraising audit findings.

The ongoing onsite inspections are instructed by the BaFin and forwarded to the Deutsche Bundesbank in as far as the examination concerns the banking business. The Deutsche Bundesbank informs the Regional Offices (*"Hauptverwaltungen"*) responsible for the credit institution in question. The Deutsche Bundesbank is responsible for the composition of the inspection teams who typically consist of members of the Regional Offices who are accompa-

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<sup>41</sup> §45 KWG 2002

<sup>42</sup> §13 section 47. Before taking such measures the Federal Government shall consult with the Deutsche Bundesbank.

nied by members of the Deutsche Bundesbank headquarters and for some onsite inspections also by members of the BaFin. Onsite supervision currently involves examinations of the minimum requirements for the trading book activities of credit institutions (MaH).<sup>43</sup> Trading book activities comprise all positions in the money market transactions, securities business, foreign exchange, commodity and derivative business. Onsite inspections examine the orderly organisation and supervision of the trading business and the requisite limitation of business risks.

Under these requirements credit institutions are regularly examined every 2 to 3 years. Additionally, credit institutions intending to use internal models for the determination of market risk of their trading book are subject to an approval examination as well as to a follow-up examination for the validation of the risk models.

Special attention is given to the so-called banks of particular importance for the banking system. These banks are scrutinised with greater intensity by the supervisory authorities. Responsibility for the supervision of these banks lies with the Deutsche Bundesbank but for the very large and internationally active banks the BaFin draws on its own analysis to comply with its supervisory functions. Supervisors from both institutions are in close co-ordination for the supervision of these institutes and form joint teams for their supervision.

### 3.4 Deposit Insurance

While in most countries, statutory deposit insurance is compulsory and publicly organised, in Germany, a statutory deposit insurance scheme coexists with voluntary and privately organised schemes. The reasons for this particularity are historical: After the bankruptcy of Herstatt in 1974, the German banking sector tried to prevent the implementation of a statutory, publicly organised deposit insurance scheme by implementing private schemes organised separately for private, savings, and co-operative banks. The scheme of the private banks is operated by the Deposit Guarantee Fund of the Federal Association of German (Private) Banks (Einlagensicherungsfonds des Bundesverbandes deutscher Banken) while the scheme of savings banks and co-operative banks are managed by their respective central giro institutions.<sup>44</sup> Only in 1998, these privately organised deposit insurance schemes were complemented by a statutory deposit insurance scheme in order to harmonise statutory deposit protection in the EU.<sup>45</sup> Because of their system of safeguarding stability within the banking group,<sup>46</sup> savings

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<sup>43</sup> See Deutsche Bundesbank Monthly Report January 2003

<sup>44</sup> The scheme of savings banks is operated by the German Savings Bank and Giro Association and regional savings bank associations, while the scheme of cooperative banks is operated by the Federal Association of German Peoples's Banks and Raiffeisen Banks and regional cooperative associations.

<sup>45</sup> The EU's Deposit Guarantee Directive of 1994 required all EU member countries to implement a statutory deposit insurance scheme on the basis of public law. This EU directive was implemented by the Deposit Guarantee and Investor Compensation Act, which, apart from the EC Deposit Guarantee Directive, also translated the Investor Compensation Directive into German law. While depositors have continued to have their accustomed level of protection, a special protection for investors has been created for the first time.

<sup>46</sup> The deposit insurance schemes of savings and cooperative banks can rather be described as support funds (Fischer and Pfeil 2004). In the case of local savings banks, public guarantees of municipalities (Gewährträgerhaftung) have priority over the payment obligation of the deposit insurance scheme. However, as many municipalities in Germany face budget deficits, the deposit insurance scheme gives loans at favorable terms to municipalities in the case of a savings bank's insol-

banks and co-operative banks were exempt from the requirement of establishing a statutory scheme. The new statutory scheme for private banks is operated by the *Entschädigungseinrichtung deutscher Banken GmbH*, which is also a by-law of the Federal Association of German Banks.

The statutory deposit insurance scheme covers up to 90 of a non-bank deposit (maximum 20,000 Euro). The same holds for a claim arising from investment business. The private scheme covers up to 30 of the liable capital of the bank concerned. For the general public, this deposit insurance scheme means virtually full protection for all deposits at the private banks. Even in the case of small banks with capital of 5 million Euro, amounts up to 1.5 million Euro per depositor are completely secure. This coverage is by far the highest in the world. The scheme protects domestic as well as foreign depositors irrespective of the currency denomination of their deposit. Not protected are interbank accounts, bonds payable to bearer and insider accounts.

The membership in the non-statutory deposit insurance scheme of private banks is voluntary, but compulsory for all members of the Federal Association of German Banks.<sup>47</sup> Like the deposit insurance scheme of savings and co-operative banks, the scheme of private banks is funded through compulsory contributions by the member banks, which pay a minimum premium of 0.03 of all customer liabilities. In 1997, risk-sensitive premiums were introduced, which are based on annual ratings. The private Auditing Association of German banks, which is closely linked with the deposit insurance scheme, assesses the financial situation and the quality of the management information system and classifies private banks according to a five grade system (A, B, and C1-C3). Banks classified as B or C have to pay additional premiums of up to 250 of the original premium. Banks which are classified as C3 for more than two years in a row can even be expelled from the scheme.

As seen, the funding of the deposit insurance schemes is exclusively private. The *Deutsche Bundesbank Act* even prevents the *Deutsche Bundesbank* to act as a lender of last resort for the deposit insurance scheme. Only in the case of a systemic banking crisis or a major bank failure when the private deposit insurance schemes may not have sufficient funds the government can be expected to step in (*Deutsche Bundesbank* 1992).

### 3.5 German Bank Regulation and Supervision—Summary

From the assessment of the regulatory and supervisory environment of German banks, we can draw one major conclusion. German banks are regulated and supervised in a very similar way as banks in other industrialised countries. In particular, supervisors have responded quickly to new developments in banking. Hence, it cannot be argued that regulation and supervision have hampered banks to exploit profitable business opportunities. One particularity in the institutional environment is the very high protection for depositors. To our knowledge only little research exists as to the effects of this generous system on bank performance and stability. However, we hypothesise that the put-option, which deposit insurance represents to bank managers, could have been an impediment to performance and risk-taking.<sup>48</sup> In a nutshell, then, this warrants the assessment of German bank market structure and performance.

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vency. Hence, its role is rather indirect. When public guarantees will be abolished by July 18, 2005, the deposit insurance scheme will have to play a more direct role.

<sup>47</sup> Subsidiaries of foreign banks which are members of the association can opt to not participate in the deposit insurance scheme, but only few have done so.

<sup>48</sup> In the sense of taking on too much risk given expected return if deposits are covered.

## 4 The German Bank Industry Compared

In this section, we are going to provide an overview of the German banking industry. We start by examining structural facts on the industry level. We then compare these with other economies to put German banking into perspective. Subsequently, we present the performance of German banks. Finally, we compare the performance of German banks to banks in other industrialised economies.

### 4.1 Domestic Structure

German banks are often classified according to three criteria (Kakes and Sturm, 2002). First, the ownership structure separates public from private banks. Secondly, the range of activities separates universal from specialised banks. Thirdly, the organisational structure separates namely commercial, savings, and cooperative banks. This classification is often referred to as the three-pillars structure of German banks.

Public banks are those institutes ultimately owned by the federal or state government. Characteristically for German banking is a substantial share of total assets being under control of banks in this category (Sinn, 1999). The banks belonging into this category are savings banks and their head institutes, the Land Banks. Ownership can be exerted directly, that is the government holds all or the majority of shares of the banking firm. More frequently, public banks are owned through indirect shareholdings and/or guarantees by the government. In contrast, private banks are owned and managed by private agents.

Regarding the classification in universal versus specialised banks, Germany has ever since been dominated by the banks falling into the former category. Banks are by and large allowed to enter any line of business activity at will. Specialised institutions are in turn those which are, either via regulation or via chosen management focus, conducting only selected banking operations. Traditionally, commercial, savings and cooperative banks engaged in all lines of business. The different extent to which this has been done will be examined later in more detail. In turn, the number of specialised institutions has been traditionally low. It should be noted that regulation did not restrict the engagement in all kinds of banking activities. In contrast to market based economies such as the US or the UK, restrictive legislation did not ignite foundation of these specialised institutes. Instead, the emergence of specialised banks, mainly in the area of real estate financing, originated from opportunities offered by new market demands. Subsequently, this emergence induced legislation in response to new banking sectors. The major players in this group comprise mortgage banks, building societies, and security houses. For the two former classes it should be noted that there exist both private and public banks specialised in real estate finance.<sup>49</sup>

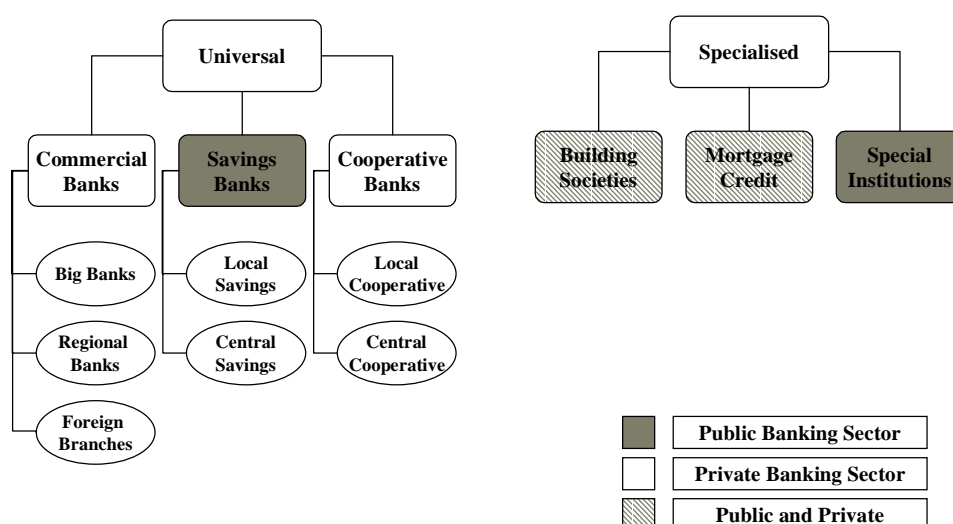
The two preceding criteria complement the last and dominant criteria as it is employed by the Deutsche Bundesbank today. Already in the 19th century the intention to ensure sound financing opportunities for the society as a whole resulted in according regulation. This determined early on a three-pillar approach, which remains to be the governing principle with regard to legislation, regulation and market practice as of now. These three pillars translate today into the major banking sectors in the industry. We examine each of them more in-depth in section 5. The first pillar comprises the commercial sector. Banks in this category are universal banks ranging considerably in size. The second pillar refers to the sector of savings banks

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<sup>49</sup> In addition, a number of state owned MFI's fall into this category, which are serving as investment vehicles for federal and state policy objectives.

and forms an important part of the so-called public sector. The cooperative sector constitutes the third pillar. Compared to the savings bank sector the size of operations is smaller. Figure 1 summarises this taxonomy.

*Figure 1: Classification of German Banks*



Source: Authors.

We turn now to an overview of the banking market as a whole. According to the Deutsche Bundesbank (2003) the past years have seen a steady decline in the number of institutes. Table 9 confirms that the average number of banks operating in Germany more than halved since 1986.

*Table 9: Number of Banks per Sector*

	All Banks	Commercial		Savings		Cooperatives		Special	
	N	N	%	N	%	N	%	N	%
<b>1986</b>	4595	314	7	601	13	3612	79	53	1
<b>1991</b>	4329	346	8	757	17	3158	73	52	1
<b>1995</b>	3622	335	9	639	18	2595	72	53	1
<b>1999</b>	2999	290	10	591	20	2039	68	79	3
<b>2003</b>	2226	261	12	504	23	1395	63	66	3

Notes: Numbers refer to end of year figures.

Source: Deutsche Bundesbank, Banking Statistics.

The relative share of commercial and savings banks increased over time while the share of cooperative banks declined significantly by 16 percentage points. Put differently, the reduc-

tion of excess capacity in the cooperative sector appears to have been the largest. Subsequent concentration occurred at a higher rate as opposed to the commercial and savings bank sector.

To learn about the potential impact on the German economy, however, the number of banks is not the most important issue. Instead, the amount of total assets under management renders more insight into the structure of the market. Table 10 depicts total assets per sector.

*Table 10: Total Assets per Sector*

	<b>All Banks</b>	<b>Commercial</b>		<b>Savings</b>		<b>Cooperatives</b>		<b>Special</b>	
	<b>TA</b>	<b>TA</b>	<b>%</b>	<b>TA</b>	<b>%</b>	<b>TA</b>	<b>%</b>	<b>TA</b>	<b>%</b>
<b>1986</b>	3551	838	24	1318	37	602	17	740	21
<b>1991</b>	5573	1453	26	1993	36	839	15	1216	22
<b>1995</b>	7539	1825	24	2883	38	1146	15	1685	22
<b>1999</b>	5741	1447	25	2071	36	748	13	1475	26
<b>2003</b>	6471	1804	28	2346	36	753	12	1569	24

Notes: TA denote total assets measured in billions of Euro. Numbers refer to end of year figures

Source: Deutsche Bundesbank Banking Statistics.

We note that despite the low number of commercial banks the assets controlled by this sector amount to roughly a third of the entire market. Savings banks have the largest share in total assets. Note that this implies that more than a third of total assets in Germany is not managed by strict formulations of economic objectives such as profit maximisation. Given the nature of the public sector, political objectives are likely to govern management at least to some extent.

*Table 11: Size Distribution in 2003*

<b>Percentile total assets</b>	<b>&gt; 95<sup>th</sup></b>		<b>75<sup>th</sup> – 95<sup>th</sup></b>		<b>&lt; 75<sup>th</sup></b>		<b>Total</b>	
	<i>% of TA</i>	<i>N</i>	<i>% of TA</i>	<i>N</i>	<i>% of TA</i>	<i>N</i>	<i>% of TA</i>	<i>N</i>
<b>Commercial</b>	40.4	37	1.3	43	0.6	146	42.3	226
<b>Central Savings</b>	28.2	13					28.2	13
<b>Local Savings</b>	6.4	47	8.6	271	1.6	171	16.6	489
<b>Central Cooperatives</b>	3.5	2					3.5	2
<b>Local Cooperatives</b>	1.2	8	3.0	110	5.2	1275	9.4	1393
<b>Total</b>	<b>79.7</b>	<b>107</b>	<b>12.9</b>	<b>424</b>	<b>7.4</b>	<b>1592</b>	<b>100.0</b>	<b>2123</b>

Notes: Size classes on the basis of annual percentiles of total assets. Specialised institutes excluded. Postbank counted as commercial bank.

Source: Authors' calculations and Deutsche Bundesbank.

An additional characteristic of the industry is the skewed distribution of banks on the basis of asset size classes. In December 2000 the top 5 percent in terms of size controlled almost 80 of all assets. Most of the assets in this size category were managed by banks of the commercial or specialised sector. However, the size distribution in Table 11 also reveals that almost a fifth of the assets controlled by large institutes belong to the public sector. The small local

banks of the public sector, in turn, only manage a mere 7 percent of all assets. In terms of number, however, they account for a fifth of all banks in the market. Note as well, that among the specialised banks many mortgage institutes and special institutions are included which also belong to the public sector.

The importance of public sector banks in the German industry is confirmed by the German Banker Association (Die Bank, 2001). According to them out of the 30 largest banks in Germany at the end of 2000 only 13 banks can be described as strictly profit maximising. While these 30 institutes control over 50 of all assets most state banks and all central cooperatives are included. In total, public banks account for 43 of the group's assets. Next to the central co-operative and saving banks, mortgage institutes and state-owned institutes like the Kreditanstalt fuer Wiederaufbau are also represented in this group. These facts seem to confirm the claim that German banking is fragmented.

## 4.2 Industry structure compared

To put the structure of the German banking industry into perspective we compare it to other industrialised countries, namely Japan, the United Kingdom and the United States. To this end we rely less on the data provided by the Deutsche Bundesbank. Instead, most of our analyses are based on OECD and to a lesser extent ECB data. Thus, we have at times to accept minor deviations due to alternative consolidation and aggregation methodologies.<sup>50</sup> Also, the time span for which data is available is generally shorter. But as the general tendencies noted in the preceding section are not contradicted we accept this trade-off and continue with this approach to gain insight into how other countries experienced changes in the banking industry in comparison to German banking.

The consolidation trend in Germany mirrors the tendency also observed in other industrial countries, as exhibited in Table 12.

*Table 12: Number of banks*

	1986	1991	1995	1999	2001
<b>Germany</b>	4465	3716	3500	2833	2370
<b>Japan</b>	77	143	139	127	124
<b>UK</b>	53	41	40	41	42
<b>US</b>	14191	11950	9983	8623	8130

Note: Data refers to banks covered in the OECD database.

Source: OECD (2003).

However, based on OECD (2003) data the rate of decline has been the highest in Germany and the US since 1991. We will examine this consolidation process more in-depth on a sector

<sup>50</sup> For example, the OECD data is based on MFI excluding specialised banks.

basis in section 5 and the respective sub-sections. In addition, we note also that the number of branches in Germany is the highest in this comparison as shown in Table 13.<sup>51</sup>

*Table 13: Number of branches*

	1986	1991	1995	1999	2001
<b>Germany</b>	39812	39228	44012	40934	37259
<b>Japan</b>	9251	14632	14693	13341	13016
<b>UK</b>	13332	12306	10601	11271	10899
<b>US</b>	n.a.	n.a.	n.a.	n.a.	n.a.

Note: Data refers to banks covered in the OECD database.

Source: OECD (2003).

To investigate this line of argumentation further we look at the ratio of banks and branches relative to the population of the respective countries. Clearly, the argument of many banks and branches indicating inefficiency and poor performance might be misleading. Instead, it is a crude productivity measure to understand how many people are provided with services by these institutes. Consider to this end Table 14 which depicts the number of banks per million of capita.

*Table 14: Number of banks per million of capita*

	1986	1991	1995	1999	2001
<b>Germany</b>	73.10	46.46	42.86	34.99	29.13
<b>Japan</b>	0.63	1.15	1.11	1.00	0.97
<b>UK</b>	0.93	0.71	0.69	0.70	0.71
<b>US</b>	58.45	47.30	37.95	31.59	28.47

Note: Data refers to banks covered in the OECD database.

Source: OECD (2003).

While Germany is undoubtedly the most densely bank-populated economy, a number of points are noteworthy.<sup>52</sup> The consolidation trend is confirmed in relative terms, too. On the other hand we note that this reduction also holds for all other countries in the comparison. Hence, while the argument that Germany is overbanked might be less drastic it is still confirmed to exist. Table 15 depicts the number of branches per thousand capita.

<sup>51</sup> Note, however, that the number of branches in Spain and to a lesser degree in France and Italy also indicates dense branching networks (See OECD, 2003). Thus, the notion that Germany is overbanked based on the observation of banks alone is challenged. At least, the argument could be extended to other banking markets in Europe as well.

<sup>52</sup> Note that the apparently substantial difference to other European countries is starkly reduced (See OECD, 2003).



Table 15: Number of branches per tsd people

	1986	1991	1995	1999	2001
<b>Germany</b>	0.65	0.49	0.54	0.51	0.46
<b>Japan</b>	0.08	0.12	0.12	0.11	0.10
<b>UK</b>	0.23	0.21	0.18	0.19	0.19
<b>US</b>	n.a.	n.a.	n.a.	n.a.	n.a.

Note that the data refers to banks covered in the OECD database

Source: OECD (2003).

Here, the relative abundance of branches is still prevailing.<sup>53</sup> In addition, the other countries did not significantly tighten their branching networks relative to their population, Japan even extended it. Regarding German banks we see the indicated consolidation trend even clearer. As operating costs are to a substantial degree caused by maintaining branches we suspect that cost reducing pressure was more intense in Germany.

A possible explanation to observe a low number of banks and a high number of branches at the same time could be related to market power. If banks exert market power they might be able to funnel the cost of maintaining dense branching networks to customers, resulting in higher interest and fee charges. This would fit a market structure where comparably few banks operate vast branching networks. In contrast, in an economy resembling more closely perfect competition market forces would result in marginal prices being driven down to marginal cost and a number of banks exiting the market. One popular indicator of market power is the distribution of market shares. While market power is associated with high concentration of market shares among few agents, perfect competition implies market participants to control only small fractions of the market. Note, however, that this descriptive analysis cannot substitute a formal analysis of market power, for example by means of the Structure-Conduct-Performance (SCP) paradigm.<sup>54</sup> As the focus is here to gain insight into the market structure by means of comparison we do conclude that market structures differ substantially across countries and that Germany is densely bank-populated, however, not as dramatically as sometimes cited.

To put the notion of a fragmented German banking market into perspective let us therefore turn to a comparison of concentration ratios between the countries of our preferred peer group. We employ two measures of concentration. First, the frequently used concentration ratio of the five banks with most of total assets (CR5). It is calculated as  $CR_m = \sum_{i=1}^m MS_i$  where  $m$  depicts the number of top banks considered and  $MS$  depicts the market share in percentage points, measured on the basis of total assets. In our case  $m=5$ . Second, we use the Herfindahl-Hirschmann Index (*HHI*). The index is based on the squared market share of all market participants, thereby assigning a greater weight to larger market shares. It is calculated according

<sup>53</sup> However, the gap between European countries is smaller (See OECD, 2003).

<sup>54</sup> The SCP model examines empirically what market structure prevails in a market. The competitive conduct of German banks has been analysed by Bikker and Haaf (2002), de Brandt and Davis (2000) and Molyneux et al. (1994). All studies found monopolistic competition. For an overview of competition measures see Bikker and Haaf (2000).

to  $HHI = \sum_{i=1}^n MS_i^2$ , where  $n$  represents the sample. While we are aware of the methodological problems with these measures they still provide a simple way to sketch the German banking market structure relative to other European countries.<sup>55</sup>

*Table 16: Concentration Ratio and HHI Indexes Compared*

Concentration	Year	Germany	Japan	UK	USA
CR5	1998	28.73	28.24	30.29	15.74
CR5	1999	27.10	26.85	31.70	16.63
CR5	2000	32.21	32.15	32.45	15.95
CR5	2001	32.90	31.44	34.92	15.53
CR5	2002	28.14	30.53	35.83	15.85
HHI	1998	2.45	2.67	3.31	1.16
HHI	1999	2.30	2.45	3.37	1.14
HHI	2000	3.12	3.16	3.53	1.20
HHI	2001	3.17	3.05	3.85	1.22
HHI	2002	2.76	3.08	4.07	1.26

Source: Authors' calculations, Bank Scope.

A first eye-catching fact emerging out of Table 16 is that the *CR5* as well as the *HHI* rise over the period for all countries. However, there remain substantial differences across countries' concentration ratios. Evidently, the data do not support that Germany is the least concentrated banking market in this comparison. In fact, the top five banks in the US accounted for only up to 18 percent of assets while in Germany the *CR5* reached up to 28 percent in 2002, almost twice as much as in the US. In comparison to Japan, Germany's bank market remains only marginally less concentrated. The other end of the continuum is represented by the UK where the top 5 banks have maintained the largest market share throughout the period. The *HHI* confirms the stylised facts revealed by the *CR5*.

In sum, market structure in terms of importance of the respective banking sectors did not seem to experience substantial changes at the aggregate level. Public banks in terms of sector, big banks in terms of size, and cooperative banks in terms of number are dominant in Germany. Commercial banks gained some market share at the cost of deteriorating market shares of cooperative banks. German banking appears to be fragmented across both sectors and size. At the industry level, the comparison to other countries however uncovers that market concentration in Germany is not as low as frequently claimed. Reduction of banks and branches during the last years largely mirrors tendencies in other countries, albeit at a higher rate.

### 4.3 Domestic performance

Having a sound understanding of the underlying market structure we now turn to the performance of German banking. As with structure we start out with domestic performance measures

<sup>55</sup> These disadvantages are high sensitivity to the size of a country's banking market, neglect of non-financial companies and difficulties related to banks with vast international operations.

relying mostly on Deutsche Bundesbank data. We turn then to an international perspective using OECD data.

We employ three key performance indicators (KPI) to assess the performance of German banks. The first is the cost income ratio (C/I). It relates administrative expenses to net interest and provision income. The second is the relation between non-interest income (NII) and interest income (II). It reflects the relative importance of this income sources for banks. We expect to see an increase of the relative importance of NII. As the ECB (2000) notes, increased competitive pressures from non-bank intermediaries is likely to further reduce margins.<sup>56</sup> This induces banks to seek alternatives to safeguard their overall profitability. The third measure is the interest margin. It is measured as the difference between the share of interest income of total assets and the share of interest expenditure of total assets, respectively. Increased competition and increasingly alternative sources of financing other than banks would suggest seeing a declining margin. Table 17 exhibits the development of these KPI's over time for Germany's banking sectors.

The KPI's for the German banking industry exhibit a continuous deterioration of performance (Deutsche Bundesbank 2002). Looking at cost income ratios one notes an increase until the time of German unification. The following decline revised the previous trend but soon reversed again, leading to unprecedented high cost income ratios at the end of the decade. The importance of non-interest income has become increasingly evident for the industry as presented by the second column in Table 17. At the same time average margins continuously diminished and thus also confirm the decline of performance. As we are interested in the relative performance of domestic banking sectors we examine the three KPI over time and across sectors.

*Table 17: Key performance indicators per sector*

	Banking Sector			Commercial Banks			Savings Banks			Cooperative Banks		
	C/I	NII/II	Margin	C/I	NII/II	Margin	C/I	NII/II	Margin	C/I	NII/II	Margin
1986	64.3%	17.1%	2.0%	68.0%	31.8%	2.6%	59.9%	10.5%	2.1%	76.6%	12.7%	2.5%
1991	68.7%	21.4%	1.6%	72.8%	31.5%	2.0%	65.9%	16.2%	1.7%	74.1%	18.4%	2.2%
1995	65.5%	20.3%	1.8%	71.2%	30.7%	2.2%	61.3%	15.8%	1.9%	69.9%	18.1%	2.4%
1999	70.0%	28.9%	0.7%	80.4%	49.0%	0.9%	65.2%	19.8%	0.8%	73.8%	25.3%	1.0%
2002	71.3%	28.4%	0.7%	80.2%	45.0%	0.9%	66.3%	19.9%	0.7%	74.4%	22.8%	1.0%

Source: Deutsche Bundesbank, Zahlen zum Sonderaufsatz "Ertragslage der deutschen Kreditinstitute".

Firstly, the comparison of cost income ratios between the four major banking sectors reveals the pronounced heterogeneity in German banking. According to this measure performance has been worst for commercial banks. For every Euro earned from interest and fee business, about 80 cent had to be spent on administrative expenses in 2002. While the development over time mirrors more or less the trend of the industry average, the pace for commercial banks was substantially higher. In the mid-80's the sector performed only 4 percent worse than the average. This gap widened to approximately 9 percent 15 years later. This could be the result of squeezed margins on the one hand and poor cost monitoring ability on the other.

<sup>56</sup> An example are car manufacturers offering aggressively priced car financing packages

The savings bank sector, in turn, exhibits the best performance on the basis of cost-income ratios. The time trend mirrors the industry but it has been above average performance throughout the entire period. In recent years, the sector was able to maintain almost balanced growth of income and expenses, leading to cost-income ratios only 7 percent higher than in 1986. Potentially, this is the result of lower funding cost for public banks, allowing them to reap higher interest income. The cooperative sector did not succeed to lock-in performance improvements achieved in the mid-90s. Contrary to the industry average cost income ratios started to decline early in this period. But by the end of the 1990's the ratio was back to where it started and again above the industry average. Cooperative banks improved in relative terms over time. In fact, they were able to almost close the substantial gap of 12 percent between sector and industry average in 1986 by the end of 2002. Perhaps this indicates growing market exposure and less regulative protection which forced cooperatives to target competitive cost income ratios by controlling increasingly for excessive spending.

Secondly, the relevance of non-interest income further illustrates the differences between banking sectors. While the general increasing trend is reflected across sectors, particularly, the commercial sector depends on this source of income. This underpins that the need for new income sources has been most pronounced for commercial banks in Germany. The growing importance of investment banking activities during the 1990's is another explanation for the observed development of NNI/II. For public sector and cooperative banks this ratio also grew, albeit starting from a lower level and growing at a higher rate. Nowadays, the ratio of non-interest to interest income is approximately 20 percent, representing twice the amount as in 1986. However, the impact of disintermediation and increased competition seems to have affected the core business of public banks to a lesser extent. It still is valid to say that collecting deposits and granting loans plays the pivotal role of savings and cooperative banks' operations.

Thirdly, interest rate margins generally decline across all sectors. In contrast to the other two measures variation between sectors is smaller. For commercial banks the erosion of margins has been the most dramatic. This observation is in line with claims of increased competition from non-banks exerting pressure on interest rate margins. Interestingly, the margins of the savings bank sector are not very different from commercial banks. This might illustrate the fact that especially savings banks compete with commercial banks in urban areas where customers increasingly encounter attractive offers by new non-bank competitors. If there is any funding advantage for savings banks due to lower refinancing costs it is passed through to customers. In turn, the cooperative margin has continued to stay well above both saving banks and commercial margins. Hence, geographical focus on rural areas and mainly agricultural customers might have shielded cooperatives from competition and enabled them to conduct limited price discrimination.

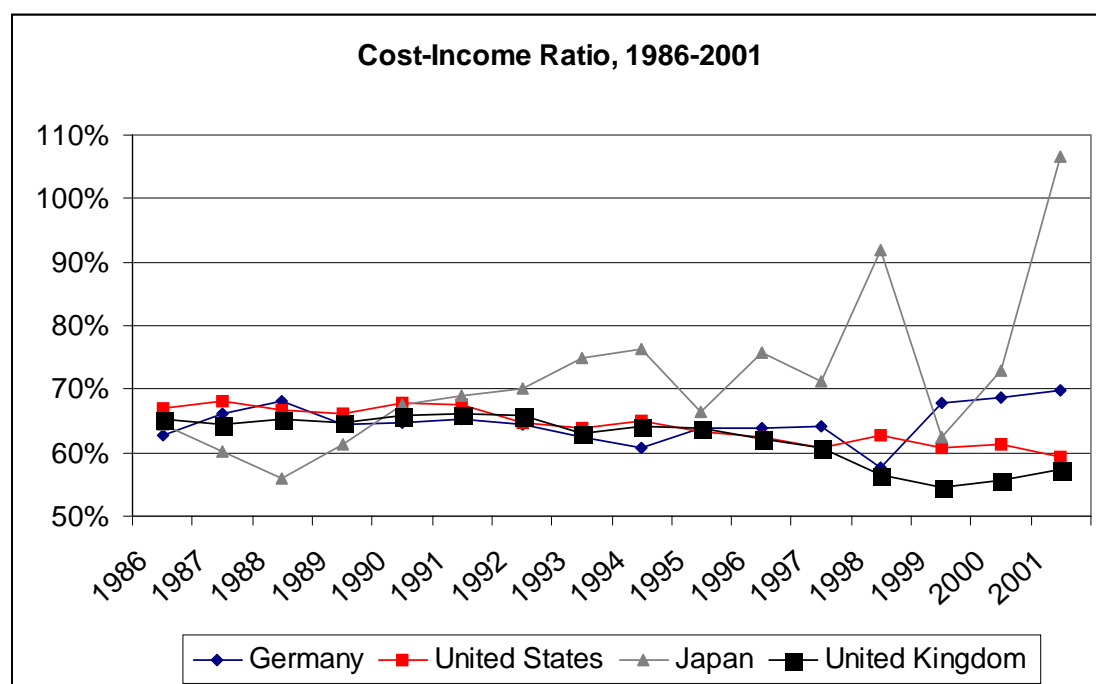
Potentially, enhances in IT\ technology lowered the cost of information sufficiently, thereby keeping margins on low levels and even reducing them slightly in recent years.

In sum, performance of German banks has declined according to three traditionally important measures. Expenditure per euro earned increased continuously while at the same time interest margins are squeezed. In addition, non-interest income is more important as an income source than ever. The three different banking sectors exhibit, however, varying degrees of performance deterioration. While commercial banks seem to have suffered the most from changed market conditions the public bank sector experienced fewer changes. In particular, cooperative banks apparently enjoyed shelter from structural changes, perhaps due to lower funding cost and/or geographically different focus on rural areas. To put the results into perspective we turn now to an international comparison of performance indicators.

#### 4.4 Industry performance compared

In contrast to the preceding section we rely for an international comparison again on data from the OECD. We examine side by side two presumably bank based systems namely Japan and Germany, with two market based systems, namely the US and the UK. Consider first the C/I-ratios in Figure 2.

Figure 2: Cost-Income ratio, 1986-2001

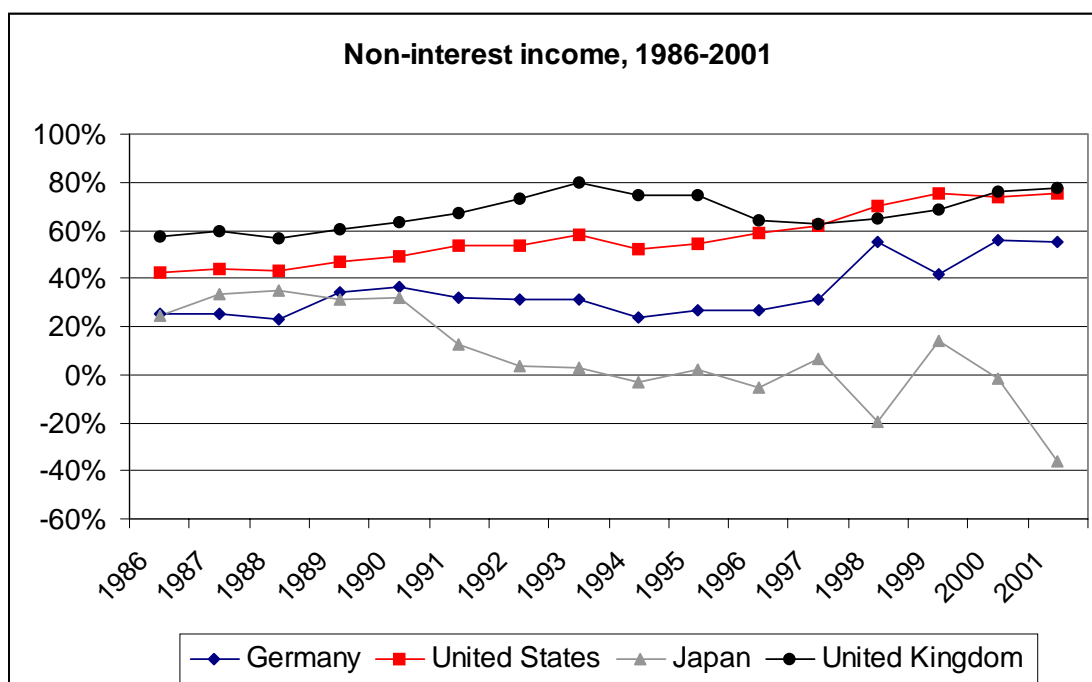


Source: OECD (2003)

While most C/I-ratios oscillate between 60 and 70 percent a number of points are noteworthy. In the end of the 80s, Germany's banks did not perform any worse than their counterparts in the US or the UK. Only by the end of the 90s did German banks exhibit less favourable C/I ratios. One hypothesis could be that higher market concentration implies market power. In turn, this could then lead to inefficient use of resources. However, at the same time we observe that the UK banking system, which is characterised by more concentration than Germany's, still performs better in this comparison. Similarly, concentration ratios for the US are substantially lower. US banks perform -according to the C/I ratio- only better in the late 90s. Consequently, a fragmented market like in Germany contradicts this hypothesis by exhibiting the lowest concentration in 2001 while simultaneously exhibiting the 2nd worst C/I ratio in that year. Consequently, the relation between market concentration and cost-income ratios is weak or at least not readily observable. The pattern over time suggests that German banks failed especially in recent years to perform well. While during the early and mid-1990's Germany performed better than UK and US banks, their C/I ratios deteriorated especially since 1998. Since then, only Japan's industry performed worse.

Regarding the importance of fee income consider Figure 3. Contrary to the rather diverse development of C/I ratios, Figure 3 suggests a more uniform tendency of increasing importance of non-interest income (NII) over interest income (II).

Figure 3: Non-interest income over interest income, 1986-2001



Source: OECD (2003)

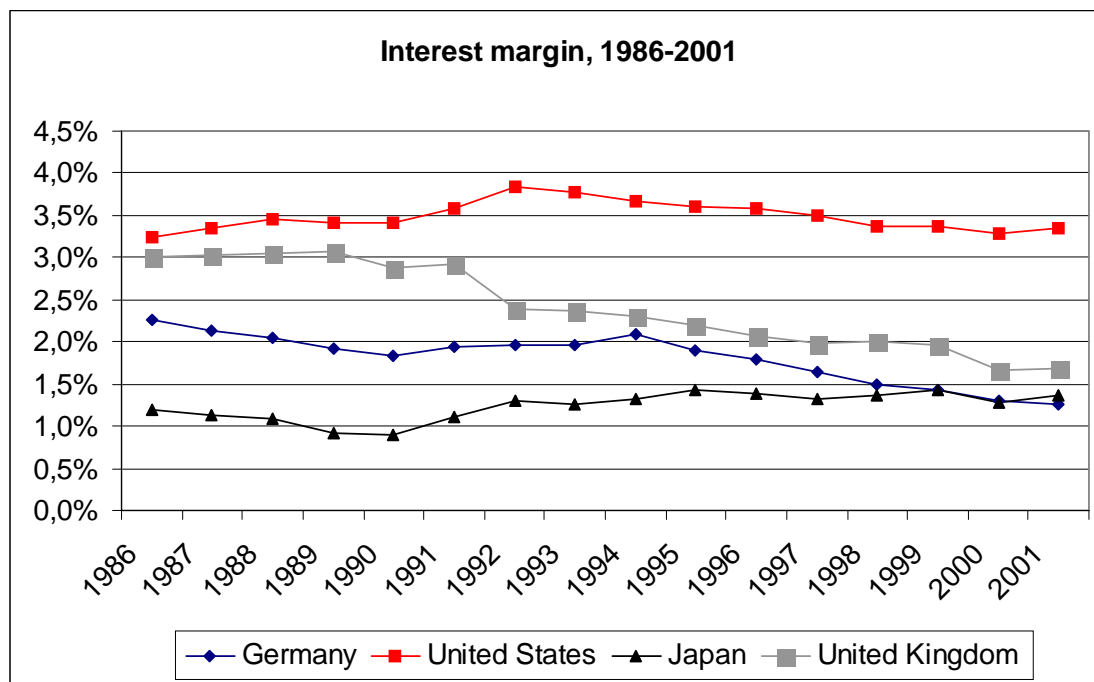
Since the mid-1990's the share of non-interest income increased for most of the countries. The most pronounced increase of the NII/II ratio can be seen in Germany which raised the share of non-interest income ratio considerably by 30 percentage points while the US and UK banks starting from higher levels increased their NII/II ratio still substantially by 20 percentage points. However, the rate at which non-interest business evolved does not match that of the UK and US. Only Japan represents an exception. For the case of Japan, negative ratios stem from negative non-interest income, reflecting clearly the industry's struggle since the beginning of last decade.

Apparently, the need for other sources of income than interest revenues was more accentuated in Germany. This would be supported if margins should have deteriorated more in Germany compared to other countries.

The development of interest margins in the four countries is shown in the next Figure 4.

The general trend in Figure 4 for Germany supports the idea that the need for other source of income was more accentuated in Germany. The interest margin of German banks was already on a low level in 1986 compared to UK and particularly US banks. Additionally, the margin declined in Germany for most of the period while remaining relatively stable in the US and even rising in Japan. In the light of the evidence, the surge in the importance of the non-interest income for German banks appears to be driven by the need to enter new source of income.

Figure 4: Interest margins from 1986-2001



Source: OECD (2003)

At the same time, we note a convergence between Germany, Japan and the UK which all exhibit a general declining trend. International financial integration in general could have been suspected to facilitate that interest margins are moving even closer to each other as price transparency increases and regulatory hurdles vanished. Another fact exhibited by Figure 4 is that US margins seem to be systematically higher than of the rest. German margins have been deteriorating constantly since 1986. In recent years, this decline was even stronger than in other countries, eventually resulting in the lowest margins among countries in this comparison.

#### 4.5 The German Bank Industry Compared—Summary

In sum, the KPIs of the individual sectors indicate that performance has experienced the same trend in the respective banking groups. However, commercial banks appear to perform worst and experienced the severest set-backs since 1986. The performance of public banks, especially the savings sector, appears to conduct their business substantially better when measured by the C/I ratio. Regarding the interest margin we conclude that by and large all sectors suffered equally from squeezed spreads. Interestingly, the interest margin of commercial banks is slightly larger than that of savings banks. This indicates that if any potential funding advantage of public banks exists, it is either wasted due to inefficient resource utilisation or this comparative advantage is passed on to consumers. Such a hypothesis is in line with the non-profit mission of many of these institutes and therefore might require an alternative/additional performance measure. The philanthropic nature of savings banks may have led them to pass their lower funding costs on to customers, offering a potential argument why their interest margin remains below that of commercial banks and the industry average.

When comparing KPIs across a selection of countries we also note that German banking performed fairly poor. We concluded in section 4.2 that claims of Germany being overbanked

on the basis of market structure have to be seen in perspective. Here, we conclude that the claim that German banking is inefficient is supported by an international comparison of three KPIs. C/I ratios are among the highest, interest margins have been declining since 1986 and the share of alternative sources of income has been relatively low.

## 5 The Three-Pillar System

In this section, we examine more in-depth the most important banking groups in Germany. For each of the sectors, we provide a brief account of their respective organisation and historical origins as well as of their balance sheet structure. As international data on the sector level is not available, we concentrate on domestic comparisons between the three pillars.

### 5.1 Organisation and Historical Origin

#### 5.1.1 *Commercial Banks*

Commercial banks can be distinguished according to big banks, regional banks and branches of foreign banks. These three groups report to the central bank on a monthly basis. Financial institutions of this group are organised as private companies most frequently either in the form of private partnerships or public companies. Interestingly, the number of listed banks is strikingly low given the high number of banks operating in Germany. The group of big banks originates from the first joint stock banks in the mid 19th century as a reaction to increased financing requirements on a large scale during the wake of the industrial revolution. After the Great Depression three major institutes evolved. These were Deutsche Bank and Commerzbank, both founded in 1870 and Dresdner Bank, founded in 1872. After WWII, the banks were separated into smaller regional banks by the allied forces. However, with growing distance to the German Democratic Republic all three banks re-emerged in the late 1950's.<sup>57</sup> They continued to constitute the group of big banks until today. In 1998, the Bayerische Hypo- and Vereinsbank (HVB) resulted from a merger between Bayerische Vereinsbank (founded in 1869) and Bayrische Hypotheken- und Wechselbank (founded in 1835). From January 1999, it joined the group of big banks. HVB is a hybrid bank as it emerged from a merger between a mortgage and a commercial bank. It owes this special status the exemption from the German mortgage act prohibiting commercial banks from conducting mortgage business on their own.

Today, all four banks are role models of universal banks. A number of acquisitions during the last years fostered international expansion and in particular increasing stakes in investment banking business. Major acquisitions of Deutsche Bank began by buying the British investment house Morgan Grenfell in 1989. Next, it acquired Banco de Madrid S.A. and Banca Popolare di Lecco SpA. in Spain and Italy respectively in 1993. Further internationalisation followed in 1997 by investing in a Japanese and an Australian security house. In 1998 Crédit Lyonnais Belgium represented expansion in retail banking while the Bankers Trust acquisition represented the entrance into American investment banking. Next to growth by acquisition, organic expansion into eastern European markets and into insurance and mortgage mar-

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<sup>57</sup> For historical perspectives of the respective banks consider for example Knapp (1969), Gall et al. (1995) and Krause (1997).



kets followed from deregulation and perceived opportunities for business. Dresdner Bank followed suit by forming a joint venture with Banque Nationale de Paris (BNP), opening the first full-license subsidiary in Russia after the end of the cold war. In 1995 the British investment bank Kleinwort Benson was acquired and five years later merged with Wasserstein Perella Group Inc., New York, to form the new investment banking division Dresdner Kleinwort Wasserstein in 2000. Commerzbank's growth is characterised by less aggressive acquisitions into the investment banking business. In addition to international expansion into investment banking all four universal banks own major stakes in some of the largest mortgage institutes in Germany. With regard to integrating insurance services, the strategies are less homogenous. While Deutsche Bank sold its according share in 2001, Dresdner Bank itself was bought by the largest German insurance, Allianz AG. Commerzbank and HVB both entered co-operations rather than capital shares with existing large insurance companies.

Despite being among the largest banks in the world when measured in terms of total assets under management, German big banks in this group enjoy a market share of 16% in 2003 as can be seen from the detailed overview in Table 18.<sup>58</sup> Still, most of the increase in market share of the commercial sector stem from the big banks.

*Table 18: Total Assets and Number of Commercial Banks*

	Industry Total		Big Banks			Regional Banks			Foreign Branches			Commercial Total		
	TA	N	TA	MS	N	TA	MS	N	TA	MS	N	TA	MS	N
1986	1816	4595	157	9	6	207	11	151	37	2	62	401	22	219
1991	2850	4329	268	9	4	400	14	198	39	1	60	706	25	262
1995	3855	3622	358	9	3	491	13	198	55	1	69	904	23	270
1999	5741	2999	825	14	4	517	9	199	105	2	87	1447	25	290
2003	6471	2226	1045	16	4	671	10	173	88	1	84	1804	28	261

Note: TA-Total Assets in billions of Euro, N-Number of banks, MS-Market share in percent.

Source: Deutsche Bundesbank, Banking Statistics.

The second group of commercial banks comprises private and regional banks. Their number increased over the years but the average size of operations declined, resulting in an approximately constant market share. Banks in this category are frequently private bankers, some of which being the oldest institutes operating in Germany.<sup>59</sup> Most of these institutes operate on a regional scale. While offering principally also universal banking services their limited scale of operations naturally leads to a higher degree of business focus. With regard to the third group of commercial banks one should note that the number of foreign bank branches increased over time but their impact on German banking has remained stable on a low level of

<sup>58</sup> Note that the market share of big banks increases significantly after 1998. This is due to the fact that from 1999 onwards, the Deutsche Bundesbank only includes only institutes that can be classified as MFI (Monetary Financial Institutions) in the group of commercial banks. Thus, some banks (mainly so called Privatbankiers) are not included anymore after 1998.

<sup>59</sup> Examples are Joh. Berenberg, Gossler & Co, founded in 1590 in Hamburg or Bankhaus B. Metzler Seel. Sohn & Co, founded in Cologne in 1712.

approximately 1-2 percent. A group which is not covered in this taxonomy are banks operating Germany which are majority-owned by foreign firms.<sup>60</sup>

### 5.1.2 Public Sector Banks

There are three tiers within the savings bank sector: local saving banks, *Land* banks and their central bank, the DGZ-Deka Bank. In 2003, the Deutsche Bundesbank lists 491 savings banks and 13 Land banks.<sup>61</sup>

*Table 19: Total Assets and Number of Savings Banks*

	Industry Total		Savings Banks			Land Banks			Savings Group Total		
	TA	N	TA	MS	N	TA	MS	N	TA	MS	N
1986	1816	4595	392	22	589	282	16	12	674	37	601
1991	2850	4329	596	21	746	424	15	11	1019	36	757
1995	3855	3622	774	20	626	701	18	13	1474	38	639
1999	5741	2999	925	16	578	1145	20	13	2071	36	591
2003	6471	2226	1000	15	491	1346	21	13	2346	36	504

Note: TA-Total Assets in billions of Euro, N-Number of banks, MS-Market share in percent.

Source: Deutsche Bundesbank Banking Statistics.

The foundation of the first private German savings bank dates back to the 18<sup>th</sup> century.<sup>62</sup> The original motive for establishing a savings bank was to provide even poor people access to a savings account and thus help to alleviate poverty.<sup>63</sup> It took cities and local authorities a while to adapt this idea, but by the beginning of the 20<sup>th</sup> century, already 2700 public savings

<sup>60</sup> As bigger players in this group are SEB(A 100% subsidiary of Swedish Skandinaviska Enskilda Banken.) and Citibank Privatkunden, one might suspect the low level of international activity to be due to exclusion of this group. However, even when accounting for the 58 commercial and mortgage banks owned by foreign firms, the share of total assets controlled never exceed 8% and exhibited the same constant pattern over time. We follow the taxonomy of the Deutsche Bundesbank in what follows.

<sup>61</sup> See Deutsche Bundesbank, Banking Statistics, July 2004, p. 12. Note that the savings bank group also includes 11 regional public loan and building associations, 8 leasing companies, 2 factoring companies, 37 public insurance companies and 75 venture capital companies (Hackethal, 2003, p. 81).

<sup>62</sup> The first German Sparkasse, the "Ersparungskasse der Allgemeinen Versorgungskasse", was founded in Hamburg in 1778. See Mura (1995a, 1995b) for an overview of the history of German savings banks. Note that the first idea of a savings bank "project" dates back to the Frenchman Hugues Delestre in 1611 (see Wysocki, 1995, p. 13). Savings banks in England and Scotland were first established in 1798 and 1810, respectively (ibid., p. 13).

<sup>63</sup> See Domes (1930), p.42. Note however, that Oellerking and Holzgrabe (1990) do not share the view that savings banks were able to alleviate absolute poverty: People who did not even attain a subsistence level of income were not able to save at all. Thus, they argue that savings banks' target groups were poor people with unstable but above subsistence level income. These savers mainly benefited from the insurance function rather than from the 2-4% interest paid on the account (ibid.).

banks had been established in Germany (Klein, 2003 and Hackethal, 2003).<sup>64</sup> Ever since the 1930s, important characteristics of savings banks have been the guarantee and maintenance obligation (*Gewährträgerhaftung* and *Anstaltslast*, respectively), which were introduced during the great depression and imply unlimited liability of the respective founding authorities (Hackethal, 2003).<sup>65</sup> During the subsequent World War II, savings banks were used to generate funding for the war.<sup>66</sup> In the decades following WWII, West German savings banks experienced a rapid expansion of their savings deposits<sup>67</sup>, while East German savings banks were closed with assets being transferred to the state (Klein, 2003). The separation of East and West German savings banks organisations ended in 1990 with the unification of the German savings banks organisation (DSGV). The 1990s, however, witnessed an increasing consolidation in the savings bank sector: The amount of savings banks decreased from 772 savings banks in 1990 to 491 savings banks in 2003.<sup>68</sup>

The 491 savings banks, apart from seven free savings banks, are all public-law institutions.<sup>69</sup> Their public mandate is anchored in the savings bank law of the relevant federal state government.<sup>70</sup> Although savings banks are required to follow economic principles, profit maximisation is not an explicitly defined objective.<sup>71</sup> However, they seem to aim at maximising profits (Hartmann-Wendels et al., 1998). An important feature of savings banks is the regional principle, which generally limits their business activities to a specific geographical area. Hence, they do not compete with other savings banks outside their local area. However, they compete with credit cooperatives in the country side and with commercial banks in cities for most forms of banking business.

*Land* banks, the community bodies of savings banks, started to evolve in the late 19<sup>th</sup> century and form the second tier of public sector banks.<sup>72</sup> Unlike the savings banks, they were founded under rather inhomogeneous circumstances and in different environments (Klein, 2003). The eleven *Land* banks are, like the savings banks, public-law institutions, the guarantors of which still have unlimited liability. They are owned by the state where they are located, by other *Land* banks as well as regional savings association (Hackethal, 2003). Their primary tasks are to act as state and municipal bank and as clearing houses for their member

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<sup>64</sup> In these early days, the regional principle applied only to liabilities but not to assets -however, underdeveloped transport and communication facilities nevertheless lead to a regional concentration of activities of savings banks (Oellerking and Holzgrabe, 1990).

<sup>65</sup> Due to an agreement between the European commission and the German authorities in 2001, these government guarantees will be abolished in 2005 (IMF, 2004).

<sup>66</sup> Mura (1995a, p. 93) states that savings increased by 273% during 1939 and 1944.

<sup>67</sup> See also Mura (1995b, pp. 231): Deposits increased from 1950-59 by 935%, from 1960-69 by 232%, from 1970-79 by 109% and from 1980-89 by 43%.

<sup>68</sup> Deutsche Bundesbank, Banking Statistics, Historical Time Series, downloadable from the internet: [http://www.bundesbank.de/statistik/statistik\\_zeitreihen.php](http://www.bundesbank.de/statistik/statistik_zeitreihen.php).

<sup>69</sup> Note that the free savings banks do not enjoy a state guarantee and that they are self controlled (Hackethal, 2003).

<sup>70</sup> General tasks of savings banks comprise to guarantee banking services in all regions, to foster savings, to support the local economic structure or to act as *hausbank* to the local authorities (see Oellerking and Holzgrabe 1990).

<sup>71</sup> See section 3 (3) of the savings bank law of the State of Northrhine-Westfalia, cited from Hackethal (2003).

<sup>72</sup> See Gesellschaft zur Förderung der wissenschaftlichen Forschung über das Spar und Girowesen (1990) for an historic overview of the emergence of *Land* banks. Sinn (1999) offers a comprehensive analysis of the role of the *Land* banks in the German banking system.

local savings banks.<sup>73</sup> Via their *Land* bank, local savings banks lend to and borrow from other savings banks in the same administrative region. In contrast to savings banks, *Land* banks are not subject to any business restrictions. Even the regional principle applies only to a limited extent, as Land banks can conduct their business on interregional and even international basis. Thus, the Land banks compete directly with the large commercial banks as they are true universal banks providing commercial and investment banking services (Hackethal, 2003; Sinn, 1999). The largest *Land* bank is the Westdeutsche Landesbank Girozentrale, which is roughly comparable to Commerzbank in terms of balance sheet total.

Finally the DGZ-Deka Bank and the German Savings Bank Association (DSGV) form the third tier of the savings bank group (Hackethal, 2003). The DGZ-Deka Bank acts as the central bank to all *Land* banks and is in charge of the investment funds of the savings bank group making it market leader in the depositing business and the administration of stock market, real estate, special and mutual funds (Klein, 2003).

### 5.1.3 Cooperative Banks

The cooperative banking sector exhibits a two tier structure comprising local cooperative banks and their central institutions, the WGZ Bank and the DZ-Bank (Klein, 2003).<sup>74</sup> In 2003, the Deutsche Bundesbank lists 1393 local cooperative banks, their two central institutions as well as thirteen other institutes belonging to the cooperative sector.<sup>75</sup>

Table 20: Total Assets and Number of Cooperative Banks

	Industry Total		Cooperative Banks			Central Institutes			Cooperatives Total		
	TA	N	TA	MS	N	TA	MS	N	TA	MS	N
1986	1816	4595	228	13	3604	80	4	8	308	17	3612
1991	2850	4329	326	11	3154	103	4	4	429	15	3158
1995	3855	3622	451	12	2591	135	3	4	586	15	2595
1999	5741	2999	534	9	2035	214	4	4	748	13	2039
2003	6471	2226	566	9	1393	187	3	2	753	12	1395

Note: TA-Total Assets in billions of Euro, N-Number of banks, MS-Market share in percent.

Source: Deutsche Bundesbank, Banking Statistics.

<sup>73</sup> Note that Sinn (1999) argues that none of these functions justifies the existence of land banks, as private banks could fulfil these duties as well. In fact, Sinn (1999) states that Land banks are primarily banks operating in the same area as large commercial banks.

<sup>74</sup> Note that the WGZ Bank (Westdeutsche Genossenschaftszentrale) is the last independent regional cooperative central bank. It operates in Northrhine Westphalia. The DZ Bank (Deutsche Zentral Genossenschaftsbank) is the head institute of the cooperative sector today which resulted from a merger of the DG Bank (Deutsche Genossenschaftsbank) and the GZ Bank (Genossenschafts-Zentralbank) in 2001. While the GZ Bank was a regional central cooperative institution, the DG Bank was the former head institute of the cooperative sector, which was founded under the name "Preussische Central-Genossenschaftskasse" in 1895. Also note that there used to be a three tier structure for about hundred years until 1988 (See Oellerking and Holzgrabe (1990)).

<sup>75</sup> See Deutsche Bundesbank, Banking Statistics, July 2004, p. 12. Note that the cooperative banking group also comprises two mortgage banks, one leasing company, one building and loan association, one insurance company and an investment company (Hackethal, 2003).

The history of credit cooperatives dates back to the middle of the 19<sup>th</sup> century, when Hermann Schulze-Delitzsch and Friedrich Wilhelm Raiffeisen, -independently of each other- developed institutions to overcome credit constraints faced by craftsmen and farmers, respectively.<sup>76</sup> The provision of affordable short term credit was only feasible by pooling resources from members of the cooperative. Credit cooperatives operated only in a limited geographical area and where thus able to use locally available information when granting loans (Greve, 2002). However, the small size of cooperatives made liquidity management by a larger institution desirable and hence, the first central clearing institution was founded already in 1864 (Oellerking and Holzgrabe, 1990).<sup>77</sup> Cooperatives became very popular in the late 19<sup>th</sup> as well as early 20<sup>th</sup> century and by 1914 there existed already 19.000 and by 1935 over 20.000 credit cooperatives (Aschhoff and Henningsen, 1995, p. 30). During WWII, the role of credit cooperatives remained ambiguous, i.e. their role in providing funds was not as clear in the case of savings banks (Oellerking and Holzgrabe, 1990).

Today, cooperative banks constitute the third pillar of the German banking system. A distinctive feature of credit cooperatives is each member's legal right to own an equal share of total assets. Also, in contrast to other banks, they are characterised by a bottom-up structure: The central institutions (DZ-Bank and WGZ-Bank) are owned by the local cooperative banks (Greve, 2002).

The primary task of the comparatively large regional institutions of the credit cooperatives is to settle liquidity for the affiliated cooperative banks which are characterised by their small operating size. They also have other functions, such as executing cash-less payments, syndicated lending and carrying out safe custody business on behalf of credit cooperatives.

## 5.2 Balance Sheet Structure

In this section, we analyse the balance sheet structure of German universal banks. For each of the three universal banking groups, we first analyse the asset and liability composition in more detail for 2002. In particular, we compare the asset and liability composition of the respective subgroups. Secondly, we identify changes in asset and liability aggregates over time.

### 5.2.1 Commercial Banks

#### *Asset Structure*

The *Big banks* invest almost half of their balance sheet in loans to non-banks, of which 23.3% (=11.2/48.0) goes abroad and 38.5% goes to enterprises and self-employed (see Table 19). They invest more than a third of their balance sheet in loans to banks, of which 71.4% goes to

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<sup>76</sup> Schulze-Delitzsch, a lawyer, named his institutions "Volksbanken" to underline his aim to provide credit to a large group of people with no access to the formal credit market, as commercial banks concentrated their lending on large companies and savings banks mainly gave out long term mortgage loans (Aschhoff and Henningsen (1995). Raiffeisen, a mayor, in the first place intended to help poorer people by collecting donations of more well-off people, but soon changed the concept so that the indigent people themselves provided the funds under the principles of self aid, self responsibility and autonomous administration (See Aschhoff and Henningsen, 1995) and Hackethal (2003). Note also, that credit cooperatives were not the only form of cooperatives that existed (see Oellerking and Holzgrabe 1990).

<sup>77</sup> Also see Aschhoff and Henningsen (1995) and note that Schulze-Delitzsch founded one supra-regional clearing institute, while Raiffeisen founded regional central clearing institutions as well as one head institute. Since 1939, Volksbanken and Raiffeisenbanken share one nation wide top institute (Aschhoff and Henningsen 1995).

foreign banks. Big banks hold the highest share of participating interests of all banks in Germany (8.1%). As has been argued in section 2, apart from the on-balance-sheet activities, big banks also engage in off-balance-sheet activities. This can be measured by the difference between the business volume and the balance sheet total. The big difference reveals that big banks are very active in this field of business.

*Regional banks and other commercial banks* have an asset structure quite similar to the one of big banks. However, there are three main differences. First, regional banks and other commercial banks invest a bigger share in loans to non-banks. While lending to foreign non-banks and to enterprises do not differ too much among the two bank groups, the bigger share must be invested in loans to domestic private persons. Second, they invest less in participating interests. And third, they conduct less off-balance-sheet activities.

Although foreign banks are permitted to engage in the same fields of business which are allowed to domestic banks, the balance sheet composition of *branches of foreign banks* is very different from the two other groups. They dedicate more than half of their balance sheet to lending to banks and a higher share than the other two groups to lending to foreign banks. In consequence, they are less engaged in lending to non-banks although they have the same share of lending to enterprises as the other two groups. Hence, they are less involved in lending to the government and private persons than the big banks and branches of foreign banks. And finally, they do not engage in off-balance-sheet activities, which is probably concentrated in their home countries.

### *Liability Structure*

For *big banks*, the most important source of funds are deposits of banks, which originate by almost 70% from foreign banks. The second most important source of funds are deposits of non-banks, which originate by almost 30% from foreign non-banks. The rest of funds comes mostly through the bond market (bearer debt securities), the equity market and capital reserves (Share capital and capital reserves are both elements of the position “capital”). With a capital ratio of 6.3, big banks have the strongest capital base of all German banks.<sup>78</sup>

For *regional banks and other commercial banks*, the most important source of funds are deposits of non-banks, followed by deposits of banks. The share of deposits from foreign (non-)banks is much smaller for this group of banks than for the group of big banks. Regional banks and other commercial banks also make less use of the bond market and have a smaller capital ratio, which is, however, still bigger than for most other banks in Germany.

For *branches of foreign banks*, the single most important source of funds are deposits of banks, which originate by 76.2% from foreign banks. Deposits of non-banks are by far not as important as for any other bank in Germany. They are not active in the bond market and they have the lowest capital ratio of all banks in Germany.

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<sup>78</sup> However, it must be noted that the raw equity ratio employed at this stage disregards the risk associated with total assets held. Put differently, while large commercial banks might hold most nominal equity they might still hold identical regulatory capital like those banking groups mostly venturing into assets with lower risk weights required.

*Table 21: Balance Sheet Structure of Private Commercial Banks in Germany, End of 2002*

<b>Assets</b>	<b>Big Banks</b>	<b>Regional Banks</b>	<b>Foreign bank branches</b>
Cash in hand <sup>a</sup>	1.2	1.6	0.5
Lending to banks	35.7	34.1	51.2
Lending to foreign banks	25.5	13.0	34.9
Lending to non-banks	48.0	57.4	37.4
Lending to foreign non-banks	11.2	9.4	7.7
Lending to enterprises <sup>b</sup>	18.5	19.3	19.6
Participating interests	8.1	1.5	0.8
Other assets	7.0	5.3	10.2
Balance sheet total	100	100	100
Balance sheet total in bn Euro	1,056 bn	665	109
Business volume	1,497 bn	701	109

<b>Liabilities</b>	<b>Big Banks</b>	<b>Regional Banks</b>	<b>Foreign bank branches</b>
Deposits of banks	40.6	29.2	72.3
Deposits of foreign banks	27.8	8	55.1
Deposits of non-banks	30.5	47.9	13.2
Deposits of foreign non-banks	8.5	4.8	7.4
Bearer debt securities outstanding	15.1	9.6	0.0
Capital <sup>c</sup>	6.3	5.3	2.6
Other liabilities	7.4	8.1	11.9
Balance sheet total	100	100	100

Note: <sup>a</sup>Including credit balances with central banks. — <sup>b</sup>Including lending to self-employed. — <sup>c</sup>Including published reserves, participation rights capital, funds for general banking risks.

Source: Deutsche Bundesbank, Banking Statistics.

### *Changes over time*

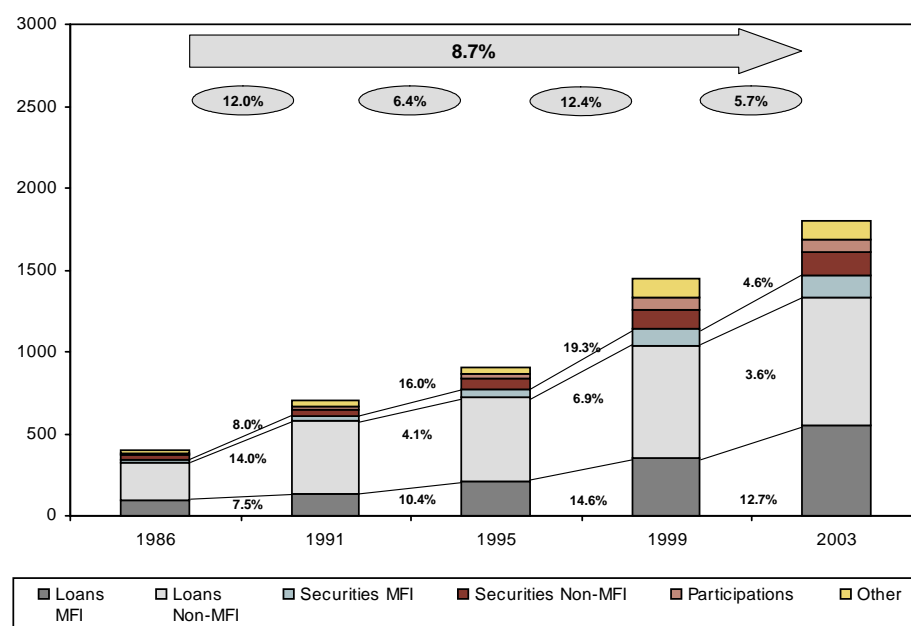
Figures 5 and 6 show the asset and liability structure of German commercial banks and their change over time. While the structure of the asset side mirrors the investment strategy, the structure of the liability side shows the sources of funds. It can be seen that total assets grew on average by 8.7% annually between 1986 and 2003.

However, traditional lending to non-financial firms grew only under proportionally. Hence, its relative importance decreased, while the relative importance of interbank lending, security holdings, and other asset holdings increased. Thus, banks tend to diversify their assets. This increase in diversification implies a trend towards disintermediation as traditional loans to the non MFI sector is in relative decline. Worth noting is the increase in participations reflecting that relationship banking is slightly rising in the commercial bank sector. The large increase between 1995 and 1999 as well as the significant drop in the growth rate of participations in the four years that followed may reflect boom and bust of the new economy bubble.

The increasing importance of interbank lending is also reflected in increasing interbank deposits on the liability side. Commercial banks are net borrowers in the interbank market as deposits are larger than loans. The increase in the interbank market over time is surprising concerning the fact that interbank loans are relatively low yield assets compared to non MFI loans. However, the increased use of the interbank market can at the same time be a sign for improved cash management of banks. Instead of borrowing for a higher rate at the ECB or lending at a lower rate to the ECB, costs are reduced and earnings increased in the interbank market.

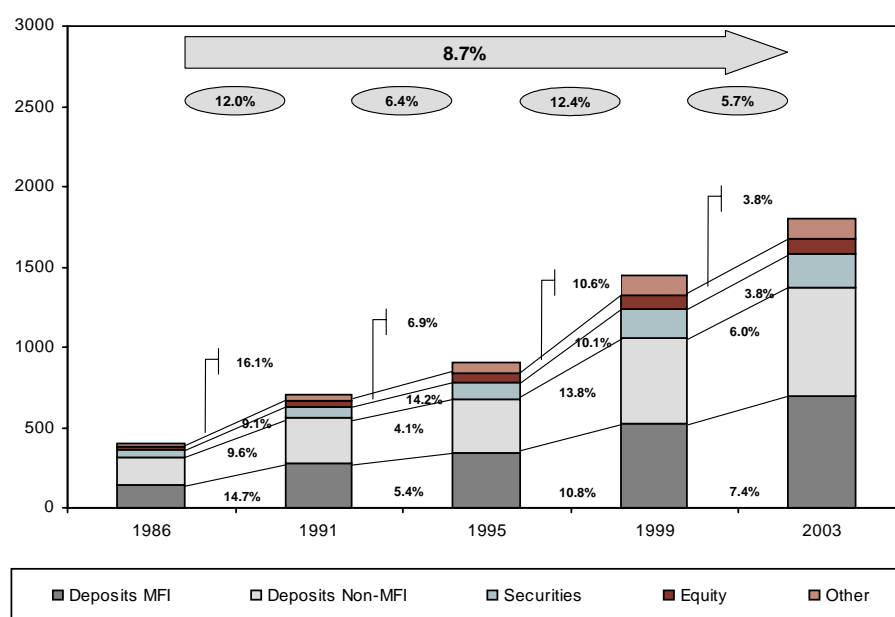
Further, the importance of funding through bearer securities also increased on the liability side. The equity position of commercial banks increased under proportionally from 1995 onwards which may reflect the fact that banks have started to adjust their equity holdings with respect to the Basel II regulations and to the increased use of risk models in determining equity holdings. It may also be due to increased cost pressure as equity is a comparatively expensive source of funding.

Figure 5: Asset Growth of Commercial Banks, 1986-2003



Source: Deutsche Bundesbank, Banking Statistics. Public Sector Banks

Figure 6: Liability Growth Commercial Banks, 1986-2003



Source: Deutsche Bundesbank, Banking Statistics.



### 5.2.2 Asset Structure

*Land* banks (including the Deutsche Girozentrale) invest half of their balance sheet into loans to banks of which 27.3 percent (=13.7/50.2) go to foreign banks. They invest another big share of 43.3 percent in loans to non-banks, of which 21.7% go to foreign non-banks and 42.2% to enterprises. For information only, private commercial banks give 5.3% of their loans to non-banks to the domestic government. *Land* banks conduct off-balance-sheet business amounting to 24.2% of the balance sheet total.

*Savings banks* invest only a quarter of their balance sheet into loans to banks, of which a tenth goes to foreign banks. They invest almost 70 percent of their balance sheet into loans to non-banks, of which 3.2% go to foreign non-banks and 41.2% go to enterprises. Savings banks do not engage in off-balance-sheet activities.

#### *Liabilities*

For *Land* banks, the most important source of funds are deposits of banks, of which a third comes from foreign banks. Deposits of banks are closely followed by bearer debt securities. In contrast to small scale savings banks, the size and reputation of *Land* banks enables them to use this source of funding. Deposits of non-banks only account for 22.8%, of which 26.8% come from foreign non-banks and 5.7% from the domestic government. Finally, *Land* banks have a capital ratio of 4.7 percent.

For *savings banks*, the most important source of funds are deposits of non-banks amounting to almost 64%. Deposits of banks only amount to 22.9%. Deposits of foreign (non-)banks are negligible. Bearer debt securities are by far not as important as for *Land* banks. Savings banks have a capital ratio of 4.5.

The balance sheet reflects the three-tier system of public sector banks. Savings banks operate locally: They lend to private households as well as enterprises and fund themselves through deposits of non-banks. *Land* banks operate as clearing houses: They lend to banks and fund themselves through deposits of banks. Besides, they lend to the domestic government and issue bearer debt securities.

The capital ratio of public sector banks is lower than that of commercial banks. A possible explanation is the public liability for state-owned banks (“Gewährträgerhaftung”): Public sector banks do not need a capital buffer as high as commercial banks because the public owner pays the liabilities in case of bankruptcy. This public liability guarantees favourable rates of funds. However, “Gewährträgerhaftung” will have to be eliminated till 18th July 2005 by the latest. Public sector banks will thus have to increase their capital when competing with commercial banks for low funding rates.

Table 22: Balance Sheet Structure of Public Sector Banks in Germany, End of 2002

<b>Assets</b>	Land Banks	Savings Banks
Cash in hand <sup>a</sup>	0.2	2
Lending to banks	50.2	24.4
Lending to foreign banks	13.7	2.5
Lending to non-banks	43.3	69.7
Lending to foreign non-banks	9.4	2.2
Lending to enterprises <sup>b</sup>	17.4	28.7
Participating interests	2.6	1.5
Other assets	3.7	2.5
Balance sheet total	100	100
Balance sheet total in bn Euro	1.324 bn	998 bn
Business volume	1.644 bn	998 bn
<hr/>		
<b>Liabilities</b>	Land Banks	Savings Banks
Deposits of banks	35.7	22.9
Deposits of foreign banks	11.9	0.1
Deposits of non-banks	22.8	63.6
Deposits of foreign non-banks	6.1	1.3
Bearer debt securities outstanding	31.6	4.6
Capital <sup>c</sup>	4.7	4.5
Other liabilities	5.1	4.5
Balance sheet total	100	100
<hr/>		
Note: <sup>a</sup> Including credit balances with central banks. — <sup>b</sup> Including lending to self-employed. — <sup>c</sup> Including published reserves, participation rights capital, funds for general banking risks.		

Source: Deutsche Bundesbank, Banking Statistics.

### *Changes over time*

Growth of assets and liabilities for the savings bank sector is depicted in Figures 7 and 8. Total assets grew by 8.2 percent per year between 1986 and 2003. However, growth declined sharply in the last four years reflecting the ongoing recession in Germany after the burst of the stock market bubble in 2000. Loans to Non-MFI institutions grew below average after 1995 implying a decline in the traditional lending pattern. Loans to MFI institutions increased sharply after 1995 highlighting a more important role of the interbank market for banks' investments as well as funding sources. From Table 20 we know that Landesbanks are net lenders while savings banks are net borrowers in the interbank market.

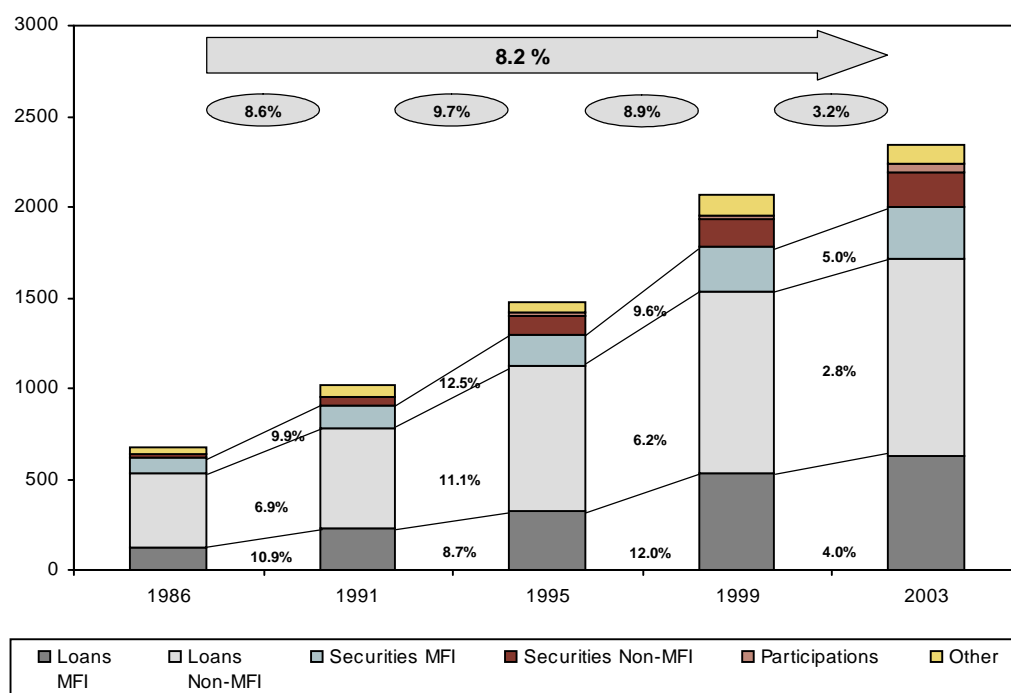
Investments in securities from MFIs and Non MFIs increased above average in all 4 year intervals pointing to increased diversification of investments. Participations did, however, not increase significantly over time. This reflects the fact that savings banks are providing a monitoring function but do not act as relationship lenders to their clients which are mainly small and medium sized enterprises.

On the liability side, deposits of Non-MFIs grew below average, while funding through bank MFI deposits increased. Concerning the diversification of funding it can be seen that securities became a more important funding source. This is mainly the case for Landesbanks, who provide these funds for the savings banks - eventually at more favourable rates than the market.

Savings banks' equity holdings increased over proportionally from 1991 onwards and especially so after 1999. This may be the result of an increased risk provision against bad loans, a

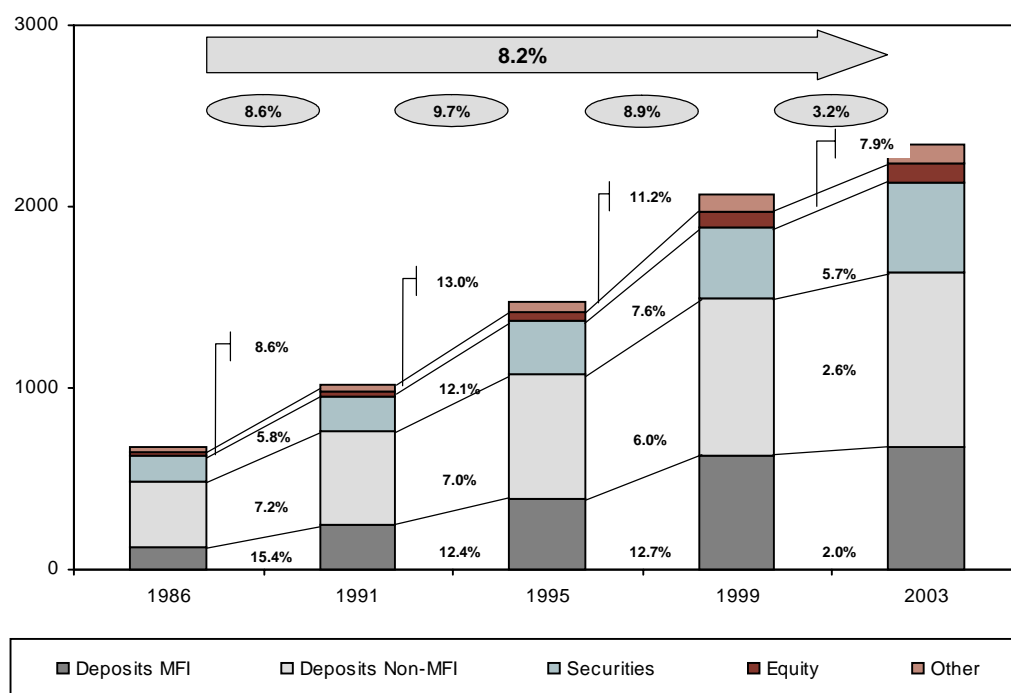
reflection of applying the new capital rules under Basel II and the fact that governmental guarantees will be faded out in 2005.

*Figure 7: Asset Growth Savings Banks, 1986-2003*



Source: Deutsche Bundesbank, Banking Statistics.

*Figure 8: Liability Growth Savings Banks, 1986-2003*



Source: Deutsche Bundesbank, Banking Statistics.

### *Asset Structure*

*Regional institutions of credit cooperatives* (including DZ Bank) invest more than 60% of their balance sheet into loans to banks, of which 22.6% go to foreign banks. They invest 27.5 in loans to non-banks, of which 25.5% go to foreign non-banks and 47.3% to enterprises. They hold participating interests amounting to 5.2 of the balance sheet. Regional institutions of credit cooperatives conduct off-balance-sheet business amounting to 6.5% of the balance sheet total.

*Credit cooperatives* invest only a quarter of their balance sheet into loans to banks, of which 5.7% go to foreign banks. They invest almost 67.5% of their balance sheet into loans to non-banks, of which 3.7% go to foreign non-banks and 41.6% go to enterprises. Credit cooperatives are not using off-balance-sheet activities. Hence, their asset structure is quite similar to the asset structure of savings banks.

### *Liability Structure*

For *Regional institutions of credit cooperatives* (including DZ Bank), deposits of banks are by far the most important source of funds (58.5%), a sixth of which comes from foreign banks. As for the *Land* banks, deposits of banks are followed by bearer debt securities. Deposits of non-banks account for 15% of total liabilities, of which 8.7% come from foreign non-banks. Finally, *Land* banks have a capital ratio of 4.9%.

For *credit cooperatives*, the single most important source of funds are deposits of non-banks amounting to more than 70 percent. Deposits of banks only amount to 13.7%, while deposits of foreign (non-) banks are negligible. Bearer debt securities are by far not as important as for regional institutions of credit cooperatives. Finally, credit cooperatives have a capital ratio of 5.1%. Thus, the liability structure of credit cooperatives are rather similar to the liability structure of savings banks although deposits of non-banks are even more important for credit cooperatives than for savings banks.

The balance sheet structure shows that the relationship between the local credit cooperatives and the regional institutions of the credit cooperatives (including DZ Bank) is similar to that between the local savings banks and the *Land* banks. Credit cooperatives operate locally: They lend to private households as well as enterprises and fund themselves through deposits of non-banks. Regional institutions of the credit cooperatives operate as clearing houses: They lend to banks and fund themselves through deposits of banks (particularly of local credit cooperatives). Although the average savings bank is about five times larger than the average credit cooperative and the average Land bank is about the same size as regional institutions of the credit cooperatives, it is the savings banks and credit cooperatives which are rather similar, and the *Land* banks and the regional institutions of the credit cooperatives which differ in several aspects: Regional institutions of the credit cooperatives engage more in lending to banks, but less in lending to households, to enterprises and to the domestic government. They fund themselves mainly through deposits of banks, but less through deposits of non-banks and bearer debt securities. However, they are rather similarly engaged in international and off-balance-sheet activities.

*Table 23: Balance Sheet Structure of Cooperative Banks in Germany, End of 2002*

<b>Assets</b>	Regional cooperative Institutions	Credit cooperatives
Cash in hand <sup>a</sup>	0.4	2.4
Lending to banks	63.2	26
Lending to foreign banks	14.3	1.5
Lending to non-banks	27.5	67.5
Lending to foreign non-banks	7	2.5
Lending to enterprises <sup>b</sup>	13	28.1
Participating interests	5.2	1
Other assets	3.7	3.2
Balance sheet total	100	100
Balance sheet total in bn Euro	199 bn	560 bn
Business volume	212 bn	560 bn

<b>Liabilities</b>	Regional cooperative Institutions	Credit cooperatives
Deposits of banks	58.5	13.7
Deposits of foreign banks	10.0	1.3
Deposits of non-banks	15.0	71.3
Deposits of foreign non-banks	1.3	1.1
Bearer debt securities outstanding	16.1	5.8
Capital <sup>c</sup>	4.9	5.1
Other liabilities	5.6	4.0
Balance sheet total	100	100

Note: <sup>a</sup>Including credit balances with central banks. — <sup>b</sup>Including lending to self-employed. — <sup>c</sup>Including published reserves, participation rights capital, funds for general banking risks.

Source: Deutsche Bundesbank, Banking Statistics.

### *Changes over Time*

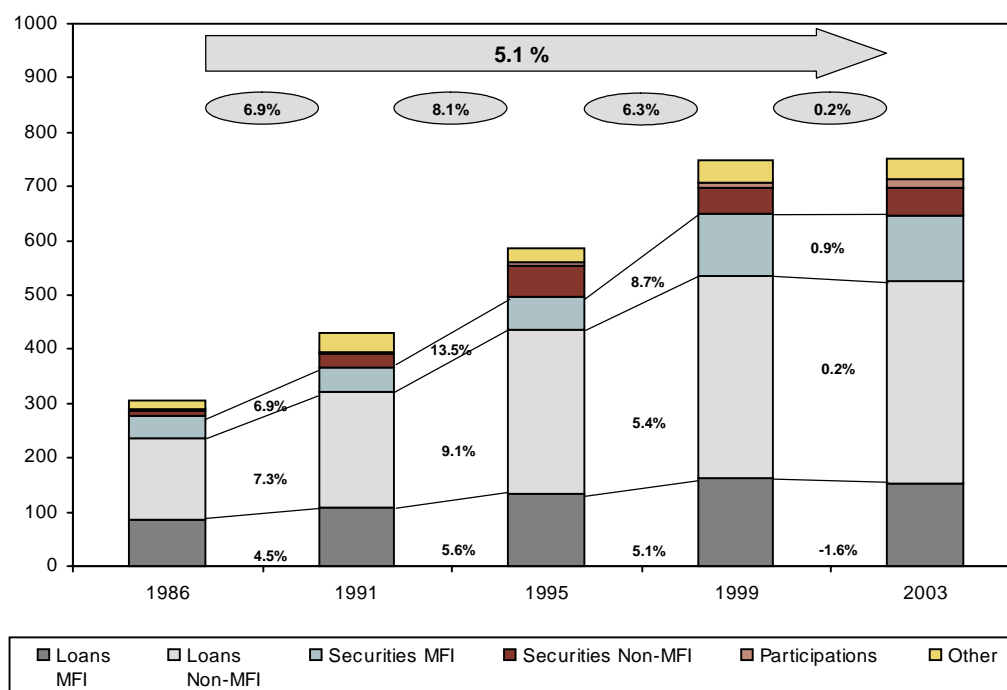
The growth of balance sheet items for cooperative banks is shown in Figures 9 and 10. Overall, total assets increased at a rate of 5.1 percent per year between 1986 and 2003. Note that this is a significantly lower growth rate than for commercial and public sector banks, respectively.

It appears that credit cooperatives were hit the hardest after the recession started in late 2000, as growth rates hardly grew at all in the following years. Loans to non MFIs, the traditional business of credit cooperatives, grew for most of the time faster than loans to the MFI sector. In contrast to commercial and savings banks, the interbank market did not significantly gain in importance for cooperatives. However, the growth rate of securities, an alternative form of investment to traditional loans, was significantly above average since 1991. Participations continue to play hardly any role as investment opportunity for cooperative banks.

On the liability side, deposits of MFI and Non-MFI institutions grew at roughly the same annual rate over the period from 1986 to 2003. In contrast to this, the use of securities as funding source increased sharply from 1986 to 1999, mainly by the regional cooperative insti-

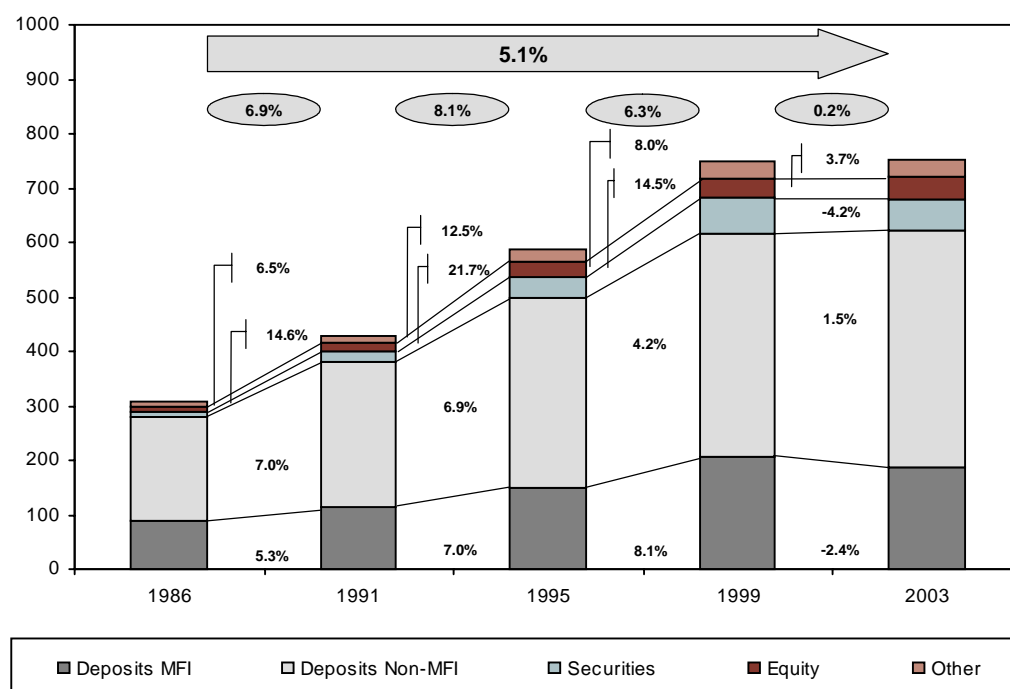
tutions as we know from Table 23. However, this trend was turned around in the following four years: growth in securities was far below the average growth and strongly negative from 1999 to 2003.

*Figure 9: Asset Growth Cooperative Banks, 1986-2003*



Source: Deutsche Bundesbank, Banking Statistics.

*Figure 10: Liability Growth Cooperative Banks, 1986-2003*



Source: Deutsche Bundesbank, Banking Statistics.

Equity grew over proportionally in all periods since 1991. This can be due to increased risk provision for bad loans and adjustments of equity due to the regulations implied by the Basel II agreements.

### 5.3 The Three-Pillar System - Summary

The Three Pillar System in Germany started to emerge already in the 19<sup>th</sup> century and has remained a characteristic feature of the German banking system ever since. It consists of the commercial bank, the savings bank and the cooperative sector. All banking groups comprise a few large and many small institutes. In the savings and cooperative sector, the large banks also act as clearing houses and refinancing sources for their small counter parts, however, there is no such obvious relationship between large and small institutes in the commercial bank sector.

From the assessment of the balance sheet compositions of German banks, we draw the following conclusions: First, the asset structure is rather similar for large and small institutions in the commercial bank sector, but not so for the savings and cooperative banks. Savings and cooperative banks exhibit several similarities concerning the behaviour of as well as the relationship between the large and small institutions. Second, studying the balance sheets over time, we observe that traditional lending to Non-MFI institutions has relatively decreased for commercial as well as for savings banks, while the significance of securities and participations has increased over time, mainly for the large institutes of all sectors. Third, the interbank market has become more important both as a source of funding and as investment opportunity, where the head institutions seem to provide liquidity to a certain degree by borrowing also from foreign banks. This may reflect the ongoing integration of financial markets as well as improved cash management strategies. Fourth, all banks have significantly suffered to a larger or lesser extend from the ongoing recession in Germany, as is shown by the significant reduction in asset growth since 2000.

## 6 Conclusion

In this paper we suggest a taxonomy to assess the role of banks and apply it to German banking in a cross-country and dynamic application. We review a number of conventional claims raised about the German banking system. Based on descriptive evidence we arrive at the conclusion that a number of these claims appear to be confirmed.

We can confirm that banks play the most prominent role in Germany's financial system. Compared to the US, the UK and Japan, no other player in the financial arena continuously channelled more funds from surplus to deficit units in the economy. Compared to debt, equity and non-bank financial intermediaries, banks are second to none in Germany. However, we acknowledge a growing importance of corporate debt markets that almost equals the volume traded in the US. Also, we emphasise that while bank loans are the preferred source of external funding of corporates, internal sources play a much more prominent role in the financing decisions of Germany's CFO's. Also, the role of banks differs significantly between SME and large corporations. While the latter rely heavily on banks in their role as *Hausbank*, they are hardly ever directly influenced by them by means of equity holdings or positions on the board. In contrast, banks do exert much more direct influence on large corporates in the form of being simultaneously lender and owner and via representation on supervisory boards. However, the claim of accumulating proxy votes remains challenged. In sum, we conclude

that with some qualifications it is fair to describe Germany as a bank-based system where dis-intermediation claims cannot be readily observed from comparisons over time and across countries and banks are part of consensus-driven decision-making at corporate firms. A remaining interesting research question is to investigate closer the relationship between bank relation and firm performance.

A distinct feature of German bank regulation is the existence of two agencies in charge of supervision, the German Financial Services Authority (“*BaFin*”)<sup>79</sup> and the central bank (“*Deutsche Bundesbank*”). While the former is in charge of issuing rules and ultimately legally binding measures, such as closure, the latter conducts the operational implementation. The reason for this separation has been scope effects in conducting monetary policy and bank supervision. With the advent of the European Monetary Union it remains to be seen, how this institutional setting will evolve. Another fairly unknown feature in German banking is the existence of multiple deposit insurance schemes, which differ between sectors and are partly private, partly public. In fact, German depositors are among the best-insured ones in the world. The question is if this generous system has had adverse effects on the structure and performance of the industry as a whole and individual banks, respectively.

With regard to the structure of German banking we find that the market is fairly fragmented. The concentration of total assets is consistently low over time compared to other industrialised economies. However, we find that conventional wisdom that Germany is over-banked must be put into perspective. First, a number of other EU countries exhibit a similar number of banks and especially branches per capita as Germany. Second, the consolidation trend in particular among cooperative and saving banks is unparalleled by any of our peer group countries. While we hypothesise this observation to indicate competitive pressure in German banking, we assert that a more thorough analysis of the determinants of this merger wave is warranted. At any rate, this competitive pressure translates into key performance indicators that, first, deteriorated continuously and, second, highlight that German and Japanese banks perform substantially worse compared to US and UK institutes. We conclude, that research is warranted that takes a more holistic approach towards the evaluation of performance. Examples include the incorporation of risk into the assessment of returns, to honour alternative objectives pursued by banks or the relation between real economic conditions and the bank industry performance.

With regard to the evolution of Germany’s three-pillar system we concede that the frequently asserted claim of tight equity cross-holdings between the German bank system and the corporate sector is confirmed. The matter of the fact is that especially large banks expanded their participations on their balance-sheets over time, independent to which sector they belong. At the same time an even more important source of funding for large savings and cooperatives as well as all commercial banks are interbank loans. We conclude that more direct stakes of banks in corporates together with further integration of interbank markets calls for research as to what these trends imply for systemic risk. Will the banking sector as a whole suffer from a higher risk of contagion? Or is the increase in both interbank deposits and loans merely a reflection of more sophisticated cash management abilities and therefore serves as an indication of improved managerial skill?

The bottom line is that banks have played, are playing and will play a dominant role in the German economy. However, a number of issues warrant further investigation as to evaluate

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<sup>79</sup> Bundesanstalt für Finanzdienstleistungsaufsicht



on the one hand the historical and current position of German banking and to infer future developments on the other.

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## Appendix

*Table A1: The German Banking Law in a historical perspective*

Law	Aim	Content
Emergency decree (1931)	Establish Board of Trustees headed by National Commissioner of Banking	Co-ordinate co-operation between Central bank and Central Government to deal with general banking crisis
German Banking Act (KWG) (1935)	Provide legal basis for supervision of banking	Board of Trustees replaced by Department for Supervision of Banking under the German Central Bank
Revision of Banking Act (1939)		Department of Supervision dissolved and functions shifted to German Agency for Supervision of Banking under the Ministry of Economics
1945-1961		Decentralised Supervision under control of ministries of economics at state level
Reformed Banking Act (January 1962)	Reintroduction of National Supervision. Creditor protection. stabilisation of banking system	Centralised Supervision by the Federal Banking Supervisory Office (BaKred) in co-operation with the Deutsche Bundesbank. Rules that have to be complied with when setting up banks and carrying out banking business
First Amendment to Banking Act (December 1971)		Elevate amount that can be withdrawn from savings deposits without prior notice
Second Amendment to the Banking Act (March 1976)	Closure of supervisory gaps which became obvious upon the failure of Bankhaus I.D. Herstatt in 1974	Tightening of Large Exposure regime. introduction of "Four Eye Principle" and on-site inspection without specific cause made possible. BaKred empowered to impose moratorium on a bank and the sole right to file a petition for bankruptcy
Third Amendment to the Banking Act (January 1985)	Incorporation of the 1 <sup>st</sup> EC Consolidation Directive into German Law. Prevention of credit pyramids by the help of subsidiaries without any increase in the parent institution's capital base. and thus of bypassing the restrictions on business operations that were based on the banks' capital	Consolidated supervision in addition to the existing supervision of individual banks

Table A1 to be continued

Table A1 continues

Fourth Amendment to the Banking Act (January 1993)	Harmonisation of banking supervision in the EEA. Implementation of the EC Own Fund Directive and EC Second Banking Directive.	Single Bank license as “European Passport” under a common definition and techniques for a solvency ratio. home country supervision
Fifth Act amending the Banking Act (December 1995)	Harmonisation of banking supervision in the EEA. Implementation of 2 <sup>nd</sup> EC Consolidation Directive and EC Large Exposures Directive	Consolidation also for minority interests. tightening of large exposures limit and provisions
Sixth Act amending the Banking Act (January 1998)	Harmonisation of banking supervision in the EEA. Implementation of EC Capital Adequacy Directive (CAD). EC Investment Services Directive (ISD). Post-BCCI Directive	Harmonise licensing and supervisory rules for investment firms in the European Union
Act Establishing the Federal Financial Supervisory (May. 2002)	Integrated supervision	Establishing the Federal Financial Supervisory Authority (FFSA) out of
Fourth Financial Market Promotion Act (July. 2002)		Fourth Financial Market Promotion Act

Source: Deutsche Bundesbank. Gläser (1999)