

The changing German banking industry: where do we come from and where are we heading to?

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1. Introduction and summary

The German banking system has undergone significant changes during the past decade. Intensifying competition, ongoing securitisation, the international integration of the financial markets and rapid advances in technology have affected banking in Germany as they have in other industrialised countries. However, the German banking sector and, more broadly, the financial system, still display a number of distinct features, such as the comparatively minor importance of institutional investors, the slow pace of disintermediation and, within the banking sector, a continuing low degree of concentration. The paper describes trends in the German banking industry in the nineties and, against this background, discusses factors determining the future role of banks. It closes with some implications for monetary policy.

Technological progress and the start of EMU will likely exert continuous and probably increasing pressure for structural changes in the German banking system, favouring further consolidation to exploit economies of scale. However, the preferences of the real sector, which should be the main forces driving the demand of non-banks for banks' services – such as the legal framework in which companies operate or the system of old-age provision – can be expected to change only gradually. Therefore, a continued trend towards increased institutionalisation of savings, a more prominent role of financial markets and further securitisation – although to a large extent “on balance” and therefore not necessarily associated with disintermediation – rather than a radical change can be expected.

Monetary policy is likely to face an increasing role of the interest rate channel. With securities markets and institutionally managed portfolios growing in importance, interest rate changes of the central bank will have an immediate impact on a larger share of financial assets, and, thus, tend to become more effective. On the other hand, the volatility of financial market prices may, at least temporarily, rise, which could dilute monetary policy measures. An increasing role of the credit channel appears rather unlikely. The implications for financial stability are hardly predictable. Although destabilisation by quick disintermediation is not to be expected, strategic re-orientation and stronger competition may be a risk. The issue of banking sector stability will require particular attention in the future.

2. Major trends in the German banking system

2.1 Overall importance of banks and balance sheet composition

In Germany, there has been a gradual decline over the past few decades in banks' overall importance as financial intermediaries. During the seventies and eighties, banks' share of total domestic financial sector assets fell from about 84.5% at end-1970 to 77% at the end of 1990. Since the early nineties, this decrease has been accelerating somewhat. At the end of 1997 the ratio was 72.5%, reflecting the more prominent role of institutionalised saving – particularly via investment funds – and direct financing through securities markets. At end-1997, investment funds held 8% of financial assets,

¹ The views expressed in this paper are those of the authors and not necessarily those of the Bundesbank.

compared with just 4% in 1990. Also, the capitalisation of German stocks and bonds accounted for 73% of banks' assets, compared with 55.5% at the end of 1990. Despite these tendencies, banks' business volume increased faster in the nineties (annual rate of +9.3%) than in the previous decade (+6.9%).

The declining overall share in financial intermediation together with the faster growth of business volume points to a major trend in German banking: a strong increase in interbank activities and in business with other financial intermediaries as well as a greater involvement in securities markets. As a result, the increase in the banks' business volume is largely attributable to a lengthening of intermediation chains. For example, the share of interbank loans rose from 26% in 1970 to 28% in 1980. In 1990 and 1997, it accounted for as much as 34%. At the end of 1997, investment funds' holdings of assets with banks (including bank bonds) accounted for around 3% of the business volume compared with 1½% in 1990.²

Longer intermediation chains also help to explain why the sharp growth of securities markets has not led to a significant disintermediation. In Germany, securitisation occurs to a large extent "on-balance", by banks issuing debt securities and holding bonds, and rarely in the Anglo-Saxon manner of removing loans from banks' balance sheets.³ The share of securitised lending since 1990 has increased slightly from 11.2 to 13.6% as at end-1997 (see Table 1). About 50% of this paper consisted of bonds issued by domestic banks, which therefore represented securitised interbank loans, and a further 15% was made up of German government bonds. Domestic corporate bonds accounted for less than 1%. Among banks' liabilities, the share of securities – mainly bank bonds – increased much more sharply, from 26.4 to 30.6%.

Table 1
Securitisation in the German banking industry¹
As a percentage of business volume

End of year	Assets		Liabilities		Memo item: Business volume in DM billion
	Money market paper ²	Capital market paper ³	Money market paper ⁴	Capital market paper ⁵	
1990	0.4	10.8	0.3	26.1	5,243.8
1991	0.3	10.8	0.3	27.3	5,573.5
1992	0.2	11.4	0.4	27.7	5,950.8
1993	0.3	12.6	0.5	27.6	6,592.2
1994	0.1	13.6	0.5	28.4	6,952.8
1995	0.1	13.0	0.7	29.5	7,538.9
1996	0.2	13.1	0.6	30.0	8,292.4
1997	0.1	13.5	0.6	30.0	9,109.9

¹ Excluding securities of foreign branches. ² Portfolios of Treasury bills, Treasury discount paper and other money market instruments. ³ Portfolios of debt certificates. ⁴ Issued short-term bearer bonds and savings bonds as well as registered money market instruments. ⁵ Issued medium and long-term bearer bonds and savings bonds as well as registered bonds.

In line with the growing importance of on-balance-sheet securitisation and business with other intermediaries, there has been a decline in the share of bank lending to the non-financial sectors and in deposits placed with banks by domestic non-financial sectors. However, this trend was much less pronounced on the asset side than on the deposit side (Table 2). At the end of 1997, bank credits still

² See Deutsche Bundesbank (1998b), pp. 27-49.

³ See Deutsche Bundesbank (1995), pp. 19-32.

made up 54.3% of enterprises' total liabilities – the same share as in 1990.⁴ It is not possible to ascertain any “crowding out” of banks or disintermediation in corporate finance. By contrast, the banks have been perceptibly weakened over the past 30 years in terms of financial investment. Between 1970 and 1997, the share of “traditional” bank deposits (excluding bank bonds) in the financial investment of the domestic non-financial sectors fell from 41.5 to 36.6%, mainly due to a larger rate per equities and investment fund certificates in investors' portfolio.

Table 2
Banking system's position within overall financing

Year	Bank lending ¹				Funds ² placed with banks			
	to domestic non-financial sectors		of which: to enterprises		by domestic non-financial sectors		of which: by households	
	DM billion	% share of total liabilities ³	DM billion	% share of total liabilities ³	DM billion	% share of financial assets ⁴	DM billion	% share of financial assets ⁴
1970	520	55.2	404	51.3	502	51.5	275	52.4
1975	883	55.8	658	51.6	853	51.8	514	54.5
1980	1,461	59.1	1,026	54.9	1,238	50.2	778	52.4
1985	1,979	53.5	1,392	51.1	1,644	44.3	1,021	46.1
1990 ⁵	2,776	54.2	2,061	54.3	2,254	41.5	1,417	44.3
1991	3,088	54.7	2,300	55.4	2,380	40.4	1,496	42.9
1992	3,271	54.1	2,429	56.0	2,533	40.8	1,601	43.1
1993	3,528	53.0	2,635	55.8	2,781	41.1	1,747	42.7
1994	3,756	54.1	2,791	56.9	2,819	40.3	1,779	41.3
1995	4,087	52.3	2,999	55.9	2,915	37.9	1,859	40.0
1996	4,399	52.3	3,233	55.7	3,115	37.9	1,943	39.2
1997	4,670	51.6	3,450	54.3	3,204	36.6	1,991	37.3

¹ Excluding lending against securities. ² Bank deposits excluding bank bonds. ³ In relation to all external financial resources of the respective sector, including securities at market prices. ⁴ In relation to the financial assets of the respective sector, including securities at market prices. ⁵ From 1990, including eastern Germany.

The banks' continued strong position in the intermediation process can also be gauged by the trend in the scale of off-balance-sheet transactions. At the end of the second quarter of 1998, the notional amounts of off-balance-sheet business added up to more than DM 28 trillion, compared with slightly less than 10% of that amount in 1990. The bulk of this, at around two-thirds, was in interest-rate-related business (interest-rate swaps, interest-rate forward and option contracts at 12½% and slightly less than 11%, respectively); forward exchange contracts and currency options, taken together, accounted for slightly more than 30%.

2.2 Concentration and competition

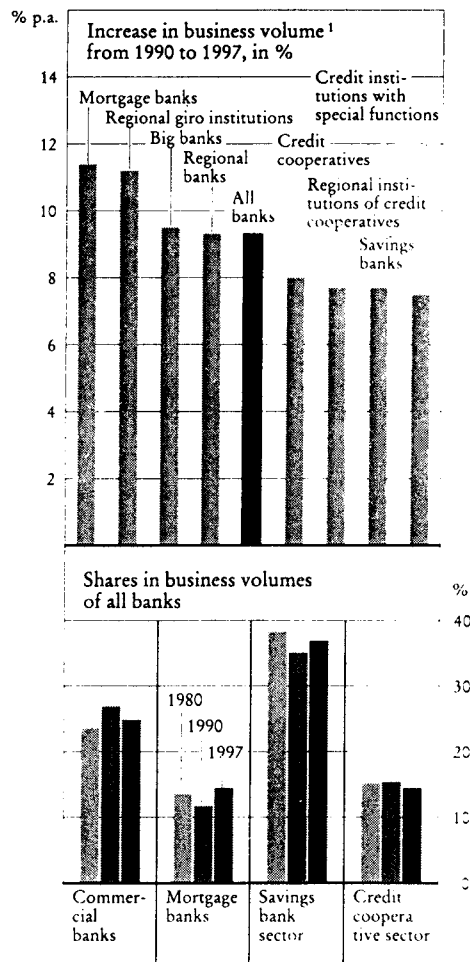
The overall degree of *concentration* in the German banking system is relatively low.⁵ The market shares in the banking business of domestic credit institutions (excluding foreign branches or subsidiaries and consolidated figures of banking trusts) exhibits no predominant role for any of the

⁴ See Deutsche Bundesbank (1998b), pp. 27-49.

⁵ See Deutsche Bundesbank (1998a), pp. 33-64.

three main groups of banks (commercial banks⁶ 25%; savings banks and Land banks, taken together, 37%; credit cooperative sector 15%: see Chart 1). This is not true without qualification with regard to individual lines of business, however. The degree of concentration is comparatively low in major retail business areas. For example, in lending business with non-banks no category of bank among domestic banks holds a market share of more than 25% (commercial banks); in deposit business, however, the savings banks occupy a strong position with a market share of 30% of domestic non-banks' deposits (see Table 3).

Chart 1
Business volume by category of banks



¹ Average annual increase; statistical changes have been eliminated.

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Nevertheless, major fields in wholesale business are dominated by commercial banks, including the branches of foreign banks. In June 1998 they accounted for around 75% of all off-balance-sheet business, with the savings banks/Land banks taking second place with only 16%. The ratios are similar in safe custody business. Although the commercial banks administer no more than roughly

⁶ The three big banks' market share is 10%. Including the business volume of their foreign branches it was 13.8%. The market shares for the big banks' financial groups (including mortgage banks, foreign subsidiaries, mutual funds and insurance companies) were significantly larger.

33% of all customer safe custody accounts, these accounts contain around 75% of all securities lodged in deposits at any one time. Furthermore, one-third of foreign branches belong to the big banks, which account for roughly one-half of the foreign branches' total business. Finally, the big banks themselves form large groups with a large number of different financial intermediaries at home and abroad.

Table 3
Share of individual categories of banks in major balance sheet position¹
In percentage points

Category of banks	End of year	Business volume	Assets				Liabilities				
			Advances to credit institutions	Advances to non-banks	Total lending against securities	Liabilities to credit institutions	Deposits of and borrowing from non-banks				
							Total	Sight deposits	Time deposits	Savings deposits and bank savings bonds	Bearer bonds outstanding
Commercial banks ²	1980	23.6	27.4	21.6	20.7	32.4	22.6	33.2	27.4	15.5	11.5
	1990	26.9	23.3	29.5	18.4	39.1	23.0	34.8	23.5	14.4	12.8
	1997	24.8	23.7	24.8	22.7	32.6	21.9	35.3	21.0	12.0	13.6
Big banks	1980	9.6	8.7	9.0	8.6	9.9	11.4	17.6	11.4	9.0	2.3
	1990	8.9	7.0	9.7	6.5	8.4	10.6	14.9	9.0	7.8	3.0
	1997	9.8	8.5	9.8	8.7	11.9	10.6	18.0	7.1	6.1	2.6
Regional banks and other commercial banks ²	1980	10.6	11.3	10.4	9.1	13.7	9.4	12.2	13.8	5.8	9.1
	1990	15.3	11.7	17.8	10.0	24.6	10.9	17.6	12.8	6.0	9.7
	1997	12.7	10.7	13.7	11.7	15.3	10.1	14.9	12.8	5.5	10.9
Branches of foreign banks	1980	1.9	5.5	0.9	1.3	6.2	0.4	0.9	0.2	0.0	-
	1990	1.5	3.3	0.8	0.9	4.3	0.3	0.4	0.2	0.0	-
	1997	1.7	3.8	0.7	1.8	4.9	0.3	0.4	0.2	0.0	0.0
Private bankers ²	1980	1.5	2.0	1.2	1.7	2.6	1.4	2.5	2.0	0.6	-
	1990	1.2	1.2	1.2	1.1	1.8	1.2	1.9	1.5	0.6	0.1
	1997	0.6	0.6	0.6	0.5	0.5	0.9	2.0	0.8	0.4	0.0
Regional giro institutions ³	1980	16.3	18.8	16.2	15.6	19.3	5.9	4.4	10.7	0.6	43.3
	1990	14.5	19.5	12.6	15.6	18.6	6.3	3.4	11.1	0.5	32.8
	1997	18.3	29.0	15.0	13.4	24.8	9.9	5.8	18.7	1.5	27.6
Savings banks	1980	22.1	9.8	23.4	36.3	9.5	36.1	34.5	12.8	55.0	0.1
	1990	20.6	10.4	21.5	35.0	10.0	33.6	34.5	14.5	54.0	4.5
	1997	18.6	6.3	21.1	30.0	13.3	30.5	32.9	11.3	52.6	4.9
Regional institutions of credit cooperatives ⁴	1980	4.3	12.6	1.4	5.8	12.9	0.9	1.0	1.1	0.8	1.9
	1990	4.1	8.1	1.8	5.8	11.6	0.6	1.2	1.0	0.1	1.7
	1997	3.8	6.5	1.5	7.0	8.7	0.8	0.8	2.1	0.0	2.9
Credit cooperatives ²	1980	10.9	7.8	11.5	13.2	5.7	17.4	19.2	11.7	22.4	0.0
	1990	11.3	7.7	11.9	15.7	4.6	19.5	19.4	14.5	26.4	1.5
	1997	10.7	5.6	12.1	14.2	5.2	19.4	20.2	12.8	29.4	2.6
Mortgage banks	1980	13.6	8.7	18.2	1.0	8.6	7.7	0.4	24.4	0.0	37.8
	1990	11.7	9.4	15.9	2.2	4.6	9.4	0.2	24.6	0.0	30.7
	1997	14.5	11.4	19.3	4.8	6.9	8.3	0.4	22.4	0.1	38.1
Credit institutions with special functions ⁵	1980	8.1	14.6	6.3	7.0	9.1	8.7	6.8	11.2	4.9	5.3
	1990	10.9	21.6	6.7	7.3	11.6	7.7	6.5	10.8	4.5	16.0
	1997	9.4	17.7	6.3	8.1	8.5	9.1	4.6	11.6	4.5	10.3
<i>Memo item:</i>											
<i>Credit institutions majority-owned by foreign banks</i>	1980	..	..	..	..	..	..	..	..	..	..
	1990	2.5	3.4	1.9	3.2	5.5	1.3	1.8	1.0	1.0	0.1
	1997	2.7	3.5	2.2	3.6	4.3	2.2	3.5	1.9	1.3	1.1

¹ Data relate to stock figures; statistical changes have not been eliminated. ² The bank category "Instalment sales financing institutions" was abolished in December 1986; the banks previously allocated to that group were reclassified as "Regional banks and other commercial banks", "Private bankers" or "Credit cooperatives" depending on their legal form. ³ Including Deutsche Girozentrale. ⁴ Including Deutsche Genossenschaftsbank. ⁵ Including Deutsche Postbank AG.

Table 4
Structure of the German banking industry

Year	Number of credit institutions ¹	Domestic branches ²
1990	4,557	43,490
1991	4,288	44,813
1992	4,030	45,589
1993	3,866	45,380
1994	3,701	44,919
1995 ³	3,616	44,486
1996	3,508	44,011
1997	3,408	43,430

¹ Excluding building and loan associations, investment companies, central securities depositories and guarantee banks.

² From 1992 extended definition of branches. ³ Including Deutsche Postbank AG but excluding its branches (1995: approx. 19,700; 1997: approx. 16,000).

The *number* of credit institutions in Germany fell by roughly one-quarter from end-1990 to end-1997 (see Table 4).⁷ The greater part of this was accounted for by mergers of relatively small credit cooperatives, mainly driven by the attempt to exploit economies of scale. However, with 2,418 institutions at the end of 1997, credit cooperatives still make up approximately 70% of all banks. The consolidation process in the credit cooperative sector also helped to shift the size structure of German credit institutions substantially upwards. Credit institutions with a business volume of up to DM 50 million – as a percentage of all credit institutions – declined from 20% in 1990 to just over 5% in 1997 (see Chart 2). The predominant size category, at around 25% of all banks, is now that of banks with a business volume of between DM 100 million and DM 250 million. However, the credit cooperatives' average business volume (DM 400 million) is still significantly lower than that of comparable savings institutions (DM 2,830 million; 600 institutions in 1997), indicating further prospects for consolidation and cost cutting. Recently, there have been more vertical mergers or even mergers between different banking groups, with geographical or product-specific economies of scope coming to the fore.⁸

A meaningful distinction can be made between retail and wholesale business with regard to the intensity of competition. In retail business, the fragmentation of the banking industry has encouraged fierce competition. The typical competitive situation at the local level is that of a broad oligopoly. Besides local credit institutions, which belong to one of the associations (savings banks or credit cooperatives), the big banks are generally present with their branches, as are regionally operating commercial banks and the postal bank. The Land banks (which belong to the savings bank sector) are also involved in bulk business nationally in some cases. During the past few years, the competitive situation in the retail sector has intensified as a result of the establishment of direct banks (mostly as subsidiaries of the big banks), securities brokers, and pure money market funds.⁹

The intensity of competition in wholesale tends to be determined by competition at the international level. A low degree of competition should therefore not be inferred from the above-mentioned concentration ratios. What is more meaningful in this context are the quantities of cross-border capital

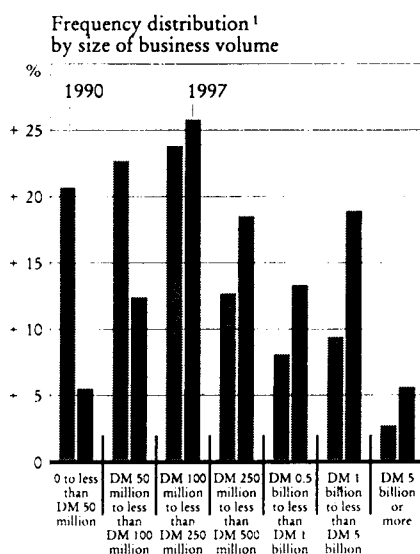
⁷ As reporting to the monthly balance sheet statistics.

⁸ Worthy of mention in this connection are the accomplished or planned mergers between Bayerische Hypotheken- und Wechselbank and Bayerischer Vereinsbank (since 1st September 1998), Südwestdeutsche Landesbank, Landeskreditbank und Landesgirokasse in Baden-Württemberg (from 1st January 1999) as well as mergers between the mortgage lending subsidiaries of financial groups. To these are added alliances between various (still legally independent) Land banks.

⁹ This view is supported by empirical analysis which does not reject the hypothesis of a structural break in banks' time deposit rates after the introduction of money market funds in August 1994; see Domanski (1997), p. 288.

movements, such as German enterprises' liabilities to non-residents, which have increased by an annual average of around 10.5% in the nineties.

Chart 2
Size structure of domestic credit institutions*



* Excluding building and loan associations. —
1 Number of credit institutions per size category as % of the number of all credit institutions.

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2.3 Profitability

The long-term trend in banks' profitability is largely consistent with the trends in other major industrial countries. Interest margins have tended to narrow, while non-interest-rate-related earnings have become more important.¹⁰ Among the expenditure items, it is mainly administrative expenses – measured as a ratio of the average business volume – that have declined. On a long-term trend, the return on capital has been falling since 1983.

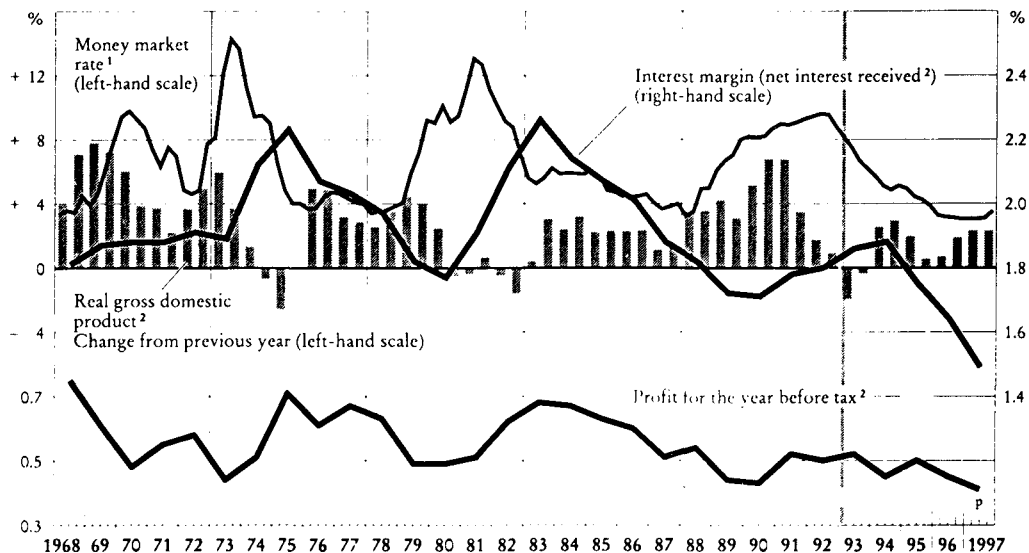
The surpluses in interest rate-related business continue to represent the most important source of earnings.¹¹ For about ten years, the banks' interest margin has been below 1.9%, the average of the last thirty years. In 1997 it reached an all-time low at 1.5% (see Chart 3). The declining interest margin is due, firstly, to the fact that the above-mentioned lengthening of the intermediation chains has brought about an expansion of low-margin business, especially interbank business. If the business volume is adjusted for interbank business with other German institutions, the interest margin level is somewhat higher (1.98% in 1997 rather than 1.50%), but has still displayed a falling trend since 1994 (see Table 5). Another reason for the declining interest margin is the persistently low interest rate

¹⁰ See Deutsche Bundesbank (1998c), pp. 27-57.

¹¹ A more precise analysis of the four major areas of earnings (net interest income, net commissions received, net profits or losses on financial operations (= own-account trading), surplus of other operating income and expenditure) is possible only from 1993, however, since the own-account trading result and other business were, until then, included in "extraordinary income" and not identifiable. The 1993 income structure (net interest income 77.2%; net commissions received 17.3%, own-account trading 4.4% and other bank earnings 1.1%) is very similar to the 1997 structure (net interest income 77.6%, net commissions received 18.3%, own-account trading 2.8%, other bank earnings 1.2%).

level, which has strongly encouraged the demand for long-term low-margin loans. In mid-1998 the share of loans to domestic non-banks (including securitised lending) with a maturity of at least four years was just under 82%, compared with 74% in 1990. Finally, the interest margin was burdened by the intensification of competition among banks.

Chart 3
Interest margin and profit for the year in the context of interest rates and business activity



1 Money market rate for three-month funds in Frankfurt, quarterly averages. — 2 As a percentage of the average volume of business, annual values. — 3 After adjustment for seasonal and working-day variations, half-yearly. Until 1992 west Germany, from 1993 the whole of Germany. — o From the financial year 1993 including east German credit institutions and in accordance with the new accounting regulations.

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Historical experience argues against a short-term recovery of the margin (see Chart 3). Net interest received tends to go up in periods of declining interest rates, as the share of longer-term fixed-rate liabilities is normally smaller than the corresponding fixed-rate share of assets, and the terms of variable-rate liabilities are often adjusted more flexibly. Additionally, borrowers tend to attend lower interest rate levels before contracting new loans for longer periods with a locked-in interest rate. Up to then, they rely more on short-term loans which offer larger interest margins to the banks. In periods of rising interest rates the interest margin tends to narrow, because the funding of banks gets more expensive. A rather stable low interest rate level tends to press the margin, too, because low-interest bearing assets are usually the only option for the reinvestment of resources deriving from maturing higher-yielding loans and securities. The analysis has, however, to be complemented by a reference to the development of profits before tax. The movement of the interest margin has a relatively weak impact on profits before tax, primarily because the interest rate cycle is accompanied by opposite movements in provisioning against credit risks.

In contrast to the interest margin, the share of commissions received in gross income has risen perceptibly (1970: 11.6%, 1997: 19.1%). Earnings from non-interest-related business have increased primarily as a result of investors' growing interest in portfolio investment (stock brokerage, placing, and safe custody business). In this area, the banks are able to benefit from their position as universal banks and their "one-stop" financing strategies. Earnings from services relating to payments, on the other hand, have tended to stagnate for a number of years. Surpluses arising from own-account trading display a high volatility in line with capital and foreign exchange markets (since 1993 their share of the business volume has been fluctuating between 0.11 and 0.01%). Moreover, their contribution to banks' gross earnings is comparatively limited overall, at an average of 2.5% since 1993.

Table 5
Interest margin without mutual interbank lending of German banks¹

Year	Business volume	Interbank business volume among German banks	Business volume, adjusted ²	Net interest received	Interest margin		Difference ⁴ in percentage points
					traditional in %	adjusted in % ³	
	(1)	(2)	(1)-(2)=(3)	(4)	(4):(1)=(5)	(4):(3)=(6)	(5)-(6)=(7)
1990	4,675,228	1,220,142	3,455,086	80,474	1.72	2.33	-0.61
1991	5,129,528	1,385,069	3,744,459	91,597	1.79	2.45	-0.66
1992	5,571,856	1,432,719	4,139,137	100,952	1.81	2.44	-0.63
1993	6,354,137	1,538,571	4,815,566	118,863	1.87	2.47	-0.60
1994	7,085,311	1,675,758	5,409,553	133,664	1.89	2.47	-0.58
1995	7,592,916	1,770,291	5,822,625	133,552	1.76	2.29	-0.53
1996	8,545,924	2,049,913	6,496,011	140,833	1.65	2.17	-0.52
1997 ^p	9,625,073	2,329,690	7,295,383	144,585	1.50	1.98	-0.48

¹ Calculated by interbank assets; interbank liabilities as securities not exactly reported statistically. Business volumes and net interest in millions of Deutsche mark. ² Business volume without interbank lending to other domestic credit institutions (including foreign branches). ³ Interest margin stemming from business with domestic and foreign non-banks as well as with foreign banks (including foreign subsidiaries of German banks). ⁴ Negative difference shows "interbank related part".

Since 1990, there has been a below-average rise in administrative expenses as a proportion of the business volume. This was mainly due to moderate salary increases. Staff costs still account for around 57% of all administrative expenditure at present (compared with roughly 62% in 1990); the declining trend is the result of sharper increases in operating expenditure, due to spending on modernising the east German banking industry in the early nineties. Investment in information technology is now a very significant item. The temporary deterioration in the cost/income ratio from just under 58% in 1983 to 63% in 1997 should therefore be seen against the fact that a future lowering of costs can be expected from that investment. Operating expenditure is also being pushed up by the changeover to the euro, overcoming the year 2000 problem and by the implementation of prudential changes.

3. The future financial landscape in Germany: what will be the role of banks?

Generally speaking, changes in the role of banks depend on three forces: firstly, changing preferences of the consumers of financial services affecting the demand for banking products. This reflects the view that changes in the financial sector should – at least in the longer run – be driven by the needs of the real sector. However, even if demand conditions remain unchanged, financial services provided by banks may be substituted by those of other financial intermediaries, securities markets or even non-banks. Secondly, such forces might be exacerbated by changes in the regulatory environment and, thirdly, by technological progress.¹² While the former may remove or raise administrative barriers, the latter could induce significant changes in the supply of financial services by facilitating the design of new financial contracts or by affecting the cost of production.

¹² See Rajan (1996), p. 121.

3.1 Changes in the supply conditions: (i) technological progress

Advances in information and computer technology have been a major – if not the most fundamental – force for change in the financial sector and the conditions under which financial services can be provided.¹³ The immaterial character of financial services has made them prone to radical changes resulting from dramatically reduced computer costs. One outstanding feature of this process is the “unbundling” of the properties embedded in financial products. The result of this splitting are often homogenous and therefore tradeable components of financial instruments such as market price risk. Bearing in mind this “commoditisation” of financial services and the properties of financial contracts, a comparison of the different functions performed by banks, other financial intermediaries and securities markets helps to identify areas where technological progress is particularly likely to increase the substitutability of bank products.

The role of banks as *suppliers of money and payment* services is of outstanding importance for the central bank. While there has been a marked trend towards the use of electronic payment systems¹⁴ and German banks have made substantial efforts to provide the necessary infrastructure, this appears to be an area where banks are rather immune to competition from other financial intermediaries, securities markets and non-banks. The reason for this is that it is necessary to have recourse to accounts with banks, in order to definitively settle payments. Liquidity can thus be provided “objectively” (system-wide) only by the banking system, which has access to refinancing at the central bank.¹⁵ Systems are conceivable in which there is no commitment to convert giro money into reserve money at a rate of one to one at all times. Nevertheless, realising such a system of free banking does not appear to be a very realistic proposition at present. The “linking” of giro money to legal tender provided by the central bank is crucial for money demand and safeguards the controllability of money supply. This is the motivation for the intended obligation of redeemability in central bank money to be placed on issuers of electronic money in the EU. Although the overall role of banks as providers of payment services is likely to remain largely unchanged, innovation and technological progress in this area might affect the structure of the banking sector and competition. The costs of technology are strengthening the incentive to form alliances and cooperations as well as joint solutions.

Distinct from the provision of money and payment service is the intertemporal allocation of resources by banks. Related to this, banks may supply passive or active transformation functions. Banks act *passively* in a world of symmetric information on the risks and returns of financial assets and transaction costs by “rebundling” them. The result is a maturity or size transformation or a diversification of risk. This can generally be achieved by pooling assets and exploiting imperfectly correlated risks in large portfolios. Therefore, passive transformation functions are generally not unique to banks, but are also provided by mutual funds,¹⁶ insurance companies or non-banks.

Technological progress has already largely eroded the advantages which banks had in providing passive transformation services. The application of financial engineering and portfolio management techniques has become widely available with the dramatic decline in computer cost. Additionally, by employing these techniques, the desired risk return profile of a portfolio can be easily constructed

¹³ See White (1998), p. 4.

¹⁴ In cashless payments, not only electronic transfers but also (and chiefly) card-based payments (especially the use of debit cards) have attained a position of considerable importance (Table 6). At the end of 1996, the number of debit card transactions was around 215 million, with a total turnover of DM 32.7 billion. The figures for 1997 are estimated at 246 million transactions valued at DM 39 billion. Measured in terms of retail turnover, the share of card-based payments increased from 6.2 to 13% between 1994 and 1997. Electronic money, which hitherto has almost exclusively existed as card money in Germany, is at present (November 1998) at around DM 110 million (money card loading equivalents). Between the end of 1997 and mid-1998, the number of places accepting the cards rose from around 35,000 to approximately 60,000.

¹⁵ See George (1997), pp. 263-70.

¹⁶ See, for example, Chant (1992), p. 43.

because a broader variety of financial “commodities” is traded. Finally, information about the products is more widely available. This increased substitutability primarily affects standardised bank products that are not directly linked to the provision of payment services, particularly longer-term deposits. As a consequence, a further erosion of interest rate margins and/or a declining share of bank deposits in financial assets of the non-financial sector is to be expected. Thus, the trends in banks’ balance sheet composition and profitability outlined above will probably continue.

Table 6
Selected developments in payment system

Year	Credit card transactions			Debit card transactions ¹			Automated teller machines, in thousands	Memo item: sight deposits ² as a % of GDP at current prices
	Number, in millions	DM billion	as a % of sight deposits ²	Number, in millions	DM billion	as a % of sight deposits ²		
1987	38.0	8.0	3.4	0.4	0.1	0.04	–	12.0
1988	46.0	11.0	4.2	0.6	0.1	0.04	–	12.4
1989	81.8	15.8	5.8	0.8	0.1	0.04	–	12.2
1990	118.2	22.4	6.9	3.5	0.2	0.06	11.3	13.4
1991	150.2	28.2	7.3	20.2	1.8	0.5	13.8	13.5
1992	186.0	33.8	8.3	28.0	1.9	0.5	19.0	13.3
1993	224.4	42.1	9.5	69.1	6.2	1.4	25.0	14.0
1994	246.5	46.4	9.5	104.0	10.8	2.2	29.4	14.7
1995	266.7	45.1	8.9	149.4	20.5	4.1	35.7	14.6
1996	289.9	49.2	8.7	214.2	32.7	5.8	37.6	16.1
1997	303.4	52.7	8.4	225.8	29.0	5.8	41.4	17.3
					(40)	(6.4)		

¹ 1987-90 as well as 1997 only “electronic cash”. In 1991 and 1992 “electronic cash” and other debit card procedures. 1993-96 “electronic cash” and “POZ procedures” (POZ: point of sale without payment guarantee). ² Annual averages.

By contrast, banks take an *active* role in the intermediation process if they take risk and reduce information asymmetries. Neither function can be achieved by merely pooling assets, but requires liable capital (for risk taking) and access to information and an incentive to process it. Technological progress – again as a result of computerisation and telecommunications – encourages the dissemination and processing of information. This leads to a reduction in information asymmetries and an improvement in conditions for monitoring, say, by rating agencies or individual investors in financial markets. It is doubtful, however, whether technological progress will have a significant effect on relationship lending.

Although state verification should become less costly, implicit long-term commitment in the bank-customer relationship,¹⁷ which is characteristic for housebank lending, may be largely unaffected by technological progress. The availability of private information to banks providing relationship lending might be more related to disclosure requirements on account of the legal form of the company or even the “philosophy” of company owners, rather than to data transmission and processing facilities. An erosion of relationship lending would be likely only if there was a significant increase in the cost of providing private information in the form of expensive borrowing vis-à-vis direct access to the capital market.

¹⁷ See, for example, Hellwig (1991) or Boot and Thakor (1994).

3.2 Changes in the supply conditions: (ii) regulatory environment

As far as changes in the regulatory environment are concerned, European integration without doubt has had the strongest impact on banks. EU banking law harmonisation at minimum levels together with providing banks with an “European passport” put an inherent pressure to level down national regulations so as not to expose domestic banks to competitive disadvantages. To that extent, the harmonisation of banking legislation in the EU area can be seen as a major driving force reinforcing the general trend towards more competition.

A clear conceptual distinction should be made between harmonisation of banking regulation and the implications which the start of stage three of European Monetary Union (EMU) will have for the role of the banks. With regard to the payment services performed by banks, the creation of a single money market and, in that context, the establishment of the Europe-wide real time gross settlement system (TARGET) deserve particular mention. The possibility of making payments within the euro area in real time might lead to a concentration of liquidity-holding not only with banks operating throughout Europe but also with non-banks. The cost advantages to be gained by “economising” the holding of liquidity are likely to promote further concentration and/or cooperation in interlinking systems.

With respect to the active transformation functions performed by banks in lending, the disappearance of the exchange rate risk within monetary union might favour a greater focus on an appropriate evaluation of credit risk, which thus becomes more important in relative terms.¹⁸ However, this argument implies that a significant mispricing of credit risks as well as unexploited business opportunities currently exist. Additionally, exchange rate risk, at least between the core countries, has played only a very limited role or has even been virtually disappearing for a number of years. It is doubtful whether this underlying assumption of large-scale market inefficiency appropriately reflects the reality in the EU. As a result, the growth of the market for securitised corporate credit in Europe and, correspondingly, the speed of disintermediation, might be less affected by EMU than is sometimes assumed.

Of greater importance might be indirect effects owing to increasing competition from European institutional investors, who can be expected to lose some of their home bias as currency matching rules disappear.¹⁹ This should contribute to more proactive cross-border portfolio investment. (Cross-border investment in German equity market may foreshadow these shifts in portfolio structure.) As the range of portfolio investments broadens, bank products, including passive transformation services, will face increasing competition. Thus, increasing cross-border activities by institutional investors will likewise reinforce the trend towards securitisation or, at least, market-oriented interest rates on banks’ liabilities.

3.3 Changes in demand conditions: preferences of the real sector

The ultimate function of the financial sector is the efficient allocation of financial resources. As a consequence, savers’ and investors’ preferences and needs should – at least in the longer run – be the main driving force behind changes in financial intermediation. In this respect, two features of the German economy are of outstanding importance in terms of the changing role of banks: firstly, the legal framework in which German companies operate and their size structure, and, secondly, the financing of provision for old age.

With respect to the demand for bank credit, the size structure of enterprises in Germany encourages borrowing from banks. For both small and medium-sized enterprises – which represent the bulk of enterprises (see Table 7) – direct recourse to the capital market has not been very attractive hitherto

¹⁸ See, for example, De Bandt (1998), p. 7.

¹⁹ However, attempts to explain the home bias – and thus also the empirical relevance of currency matching rules – have not yielded satisfactory results; see Upper (1998), pp. 5-7 for a review of the literature.

on account of the costs associated with the issuing of securities and continuous monitoring.²⁰ An added factor is that relationship lending by housebanks ensures a relatively steady availability of credit across economic cycles.²¹ In this context, it is to be mentioned that small and medium sized companies lack the endowment of pension reserves as a source of internal financing. Into this picture fits that large enterprises have increasingly been disengaging themselves from bank lending, whereas for small and medium-sized enterprises, bank loans even account for an increasing share of their liabilities (see Chart 4).²²

Table 7
Enterprises by legal form and size of sales
At end-1996

Volume of sales (turnover) in DM million by size of sales volume	Public limited company	Private limited company	Partnership s	Sole proprietors	Others	Total
<DM 5 million	1,310	409,496	215,016	749,735	26,542	1,402,099
5 million - <10 million	1,180	194,942	116,322	84,987	14,556	411,987
10 million - <50 million	9,963	458,148	422,774	101,332	54,439	1,046,656
50 million - <100 million	12,865	180,631	216,966	16,342	33,161	459,965
100 million - <500 million	81,835	407,560	459,174	15,669	79,931	1,044,169
500 million - <1 billion	74,470	153,767	170,535	0	23,730	422,502
1 billion and more	1,211,264	411,651	349,163	7,748	84,998	2,064,824
Total	1,392,887	2,216,195	1,949,950	975,813	317,357	6,852,202
Number of enterprises by size of sales volume						
<DM 5 million	1,106	357,211	286,266	1,952,622	42,003	2,639,208
5 million - <10 million	163	28,034	16,490	12,488	2,066	59,241
10 million - <50 million	394	23,092	19,828	5,747	2,518	51,579
50 million - <100 million	177	2,606	3,128	237	472	6,620
100 million - <500 million	329	2,005	2,325	85	387	5,131
500 million - <1 billion	105	220	252	0	36	613
1 billion and more	171	176	143	2	41	533
Total	2,445	413,344	328,432	1,971,181	47,523	2,762,925

The financing preferences due to the legal framework are likely to carry even greater weight than the size structure. With regard to the various legal forms, access to the capital market is primarily open to incorporated enterprises on account of the far-reaching disclosure requirements. An added factor is that the wish to avoid outside influence is of much less importance to the “anonymous” public companies than to partnerships or sole proprietorships. The decline in bank loans has been even more pronounced in the case of incorporated enterprises, which underlines the connection between financing behaviour and legal form. Financing through banks has also benefited from the creditor-friendly regulations of German property and bankruptcy legislation. Apart from the possibility of using large parts of a firm’s assets as collateral, another attraction is the viability of loan collateral in the event of bankruptcy. Finally, accounting rules are aimed at providing creditor protection. These

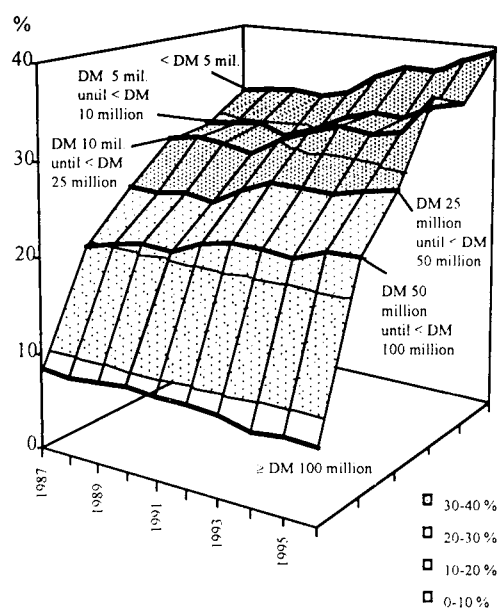
²⁰ See Kashyap and Stein (1997), p. 11.

²¹ Elsas and Krahen (1998) report that “housebanks are able to establish a distinct behavioural pattern consistent with the idea of long-term commitment. In particular, we found that housebanks do provide liquidity insurance in situations of unexpected deterioration of borrower ratings” (p. 3).

²² See Deutsche Bundesbank (1992), p. 26.

factors are likely to change as a result of increasing internationalisation and competition in goods markets and the associated efforts to restructure companies.

Chart 4
Share of bank credits by size of companies*



*Companies of manufacturing, trade and service sector, all bank credits in relation to balance sheet volume. Size categories by annual turnover. Source: *Companies' balance sheet statistics*

As far as the demand for bank deposits is concerned, the financing of old age provision plays a major role. There are two ways in which financing, largely based on the contribution system, leads to a strengthening of the banks: firstly, a key motive for individual, long-term capital investment is no longer to the fore. Instead, saving for specific purchases and precautionary saving play the most important role in households' investment decisions in Germany. Accordingly, preference is given – in addition to (tax-supported) life insurance schemes – to forms of investment that are comparatively liquid and subject to only minor price or credit risks, or none at all, such as bank deposits happen to be (see Table 7). Secondly, in the German financial system there are no pension funds, which typically invest very heavily in securities and contribute to a channelling of savings through the securities markets.

In the light of the ongoing “ageing population” debate and the questions surrounding the capacity of the statutory public pension insurance scheme to finance the present level of provision, it is probable that private old age pensions will rapidly gain in importance. This in turn is likely to lead to a growing need for professional asset and portfolio management, i.e. for passive transformation services which may also be performed by investment funds, in particular. It deserves to be mentioned in this connection that the authorisation of “genuine” pension funds envisaged in the fourth Financial Market Promotion Act is likely to strengthen this trend.

Taken together, bank's role in the German financial system appears to be anchored in the real sector primarily with respect to the active transformation functions associated with lending rather than the passive transformation functions mainly associated with collecting funds. Generally, it is important to recognise that prevailing financing structures are a result of institutional arrangements outside the financial sector, such as the legal or the tax system, but also influenced by cultural-specific

behavioural patterns. These factors are basically exogenous to the financial system and likely to change only gradually.

3.4 Strategic responses by German banks

As regards the main business areas, a (continued) deterioration of banks' role as providers of specific functions (or contracts) can be expected, particularly with respect to time and savings deposits and possibly other largely standardised products embedding passive transformation functions. As far as lending is concerned, a sharp decline of bank lending appears rather unlikely, given that some of banks' active transformation functions are still unique. However, the trend towards disintermediation is likely to strengthen gradually with changing structures in the real sector, such as the increasing size of companies and the shift towards listed companies.

Strategic responses of banks as *institutions* comprise two dimensions: the range of products offered and the geographical area covered. With respect to the first, the range varies from financial conglomerates or cooperations providing all financial services within one bank as one extreme to specialised banks covering niches as the other. With respect to the second particularly, local, European and global strategies are conceivable.

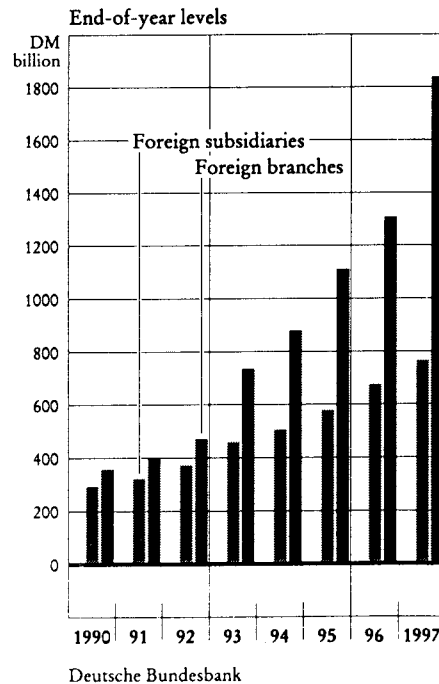
As to the geographical coverage of bank's activities, profit maximisation in an environment of largely competitive deposit rates (or, more generally, refinancing conditions) may be achieved, on the one hand, by translating customer relation and local information into economic rents, or, on the other, by attempts to exploit economies of scale by offering standardised products. The former strategy is obvious for banks that already focus on local business, as credit cooperatives and savings banks, while the latter could be particularly advantageous for big banks with a large branch network or direct banking activities. The successful implementation of local strategies mainly relying on relationship banking may not cause significant concentration tendencies. However, to be able to provide the full range of financial products to local customers, a close cooperation between local banks with compound institutions may be required.

European or global strategies have, up to now, been focused on specific areas in wholesale business²³ and thus rely more on transaction-based banking and competition with financial markets. The policy followed by German banks so far, has primarily been to increase the presence in foreign markets by opening foreign branches (see Chart 5). In mid-1998, branches and subsidiaries together accounted for more than 30% of the business volume of domestic credit institutions (compared to 12% in 1990). While this has been mainly related to "traditional" commercial banking activities, big banks got access to global investment banking business by the acquisition of foreign investment banks. Takeover activities of the largest German banks could continue after the start of EMU or be reinforced by it. Besides, European niche strategies of specialised banks, e.g. mortgage banks, are conceivable for the future.

A segment of the German banking system particularly prone to structural changes might continue to be medium-sized universal banks, that are perceived to be neither able to fully exploit economies of scale in retail business nor to have the "critical mass" to engage in European or global wholesale activities. For these banks, particularly mergers could become an attractive option, but takeovers from foreign banks are not unlikely either.

²³ For a similar classification, see Rajan (1996), p. 123.

Chart 5
Business volume of foreign subsidiaries and foreign branches



4. Where are German banks heading: some implications for monetary policy

Although technological progress and EMU will exert continuous and probably even increasing pressure for structural changes in the German banking system, large disruptions or structural breaks appear rather unlikely. The reason is that the main forces driving the demand of the non-financial sectors, such as the legal framework for companies or the system of old age provision, can be expected to change only gradually. As in the past, the underlying trends should be an increased institutionalisation of savings and a more prominent role of financial markets and securitisation, though to a large extent on balance and therefore not necessarily leading to disintermediation.

With respect to the *impact of monetary policy* on the economy, a growing significance of the interest rate channel can be expected. Growing competition tends to quicken the pace with which monetary policy changes work through the banking sector. Increasing securitisation means that monetary policy measures impact on a growing stock of assets, which is subject to ongoing market valuation and changes in relative prices, and will spread more quickly over the whole range of domestic and foreign financial and investment instruments. Additionally, the financial system tends to be more strongly exposed to shifts in market sentiment. This may be pronounced by a more prominent role of institutional investors, who – at least at times – appear to contribute to higher financial market volatility.²⁴ As a consequence, monetary policy-makers could be required to focus – to an even greater extent than before – on avoiding uncertainties and shifts in expectations of financial markets' participants.

²⁴ See Domanski and Neuhaus (1996), p. 120 and Deutsche Bundesbank (1996), p. 59.

The role of a credit channel of monetary policy, the existence of which has not been supported empirically for Germany,²⁵ should only under specific circumstances play some role in the future. It is conceivable that increasing competitive pressure on deposits may force banks to adjust not only interest rates on credit, but also credit availability as a result of large changes in short term interest rates. However, if the willingness of housebanks to lend to small and medium sized enterprises depends on the availability of private information and the good access to real collateral provided for by the German bankruptcy law,²⁶ it is again changes in the real sector that should be more important than changes in the financial sector.

This leads to the question whether the changes in the financial system will negatively affect the *stability* of German banks and the overall financial system. Even in the absence of strong disintermediation trends, mainly three factors may contribute to higher fragility: First, an increasing share of banks' assets and liabilities prone to changes in market prices (as a consequence of increased competition on the liability side and growing securitisation); second, a higher volatility of earnings related to securities business; and third, the re-positioning in new markets and business areas may be associated with additional fluctuations in earnings. Universal banking activities can be expected to provide for some smoothing of banks' profits. From this perspective, strategies focused on specialisation may bear more risk for instability than those concentrating on universal banking. In any case, issues related to banking sector stability will require particular attention.

²⁵ See Stöss (1996), pp. 47-8.

²⁶ See Stöss, (1996), p. 48.

References

- Boot, A. W. and A. V. Thakor (1994): "Moral Hazard and Secured Lending in an Infinitely Repeated Credit Market Game". *International Economic Review*, 35, pp. 899-920.
- Chant, J. (1992): "The New Theory of Financial Intermediation", in K. Dowd and M. K. Lewis (eds.), *Current Issues in Financial and Monetary Economics*. Houndmills, pp. 42-65.
- De Bandt, O. (1998): *EMU and the Structure of the European Banking System*. Paper presented at the SUERF conference in Frankfurt, 15th-17th October.
- Deutsche Bundesbank (1992): "Longer-Term Trends in the Financing Patterns of West German Enterprises". *Monthly Report*, October, pp. 25-39.
- Deutsche Bundesbank (1995): "Trends Towards Securitisation in the German Financial System and Their Implications for Monetary Policy". *Monthly Report*, April, pp. 19-32.
- Deutsche Bundesbank (1996): "Financial Market Volatility and Its Implications for Monetary Policy". *Monthly Report*, April, pp. 51-68.
- Deutsche Bundesbank (1998a): "Trends in the Banking Sector and the Market Position of the Individual Categories of Banks Since the Beginning of the Nineties". *Monthly Report*, March, pp. 33-64.
- Deutsche Bundesbank (1998b): "Overall Financial Flows in 1997". *Monthly Report*, May, pp. 27-49.
- Deutsche Bundesbank (1998c): "The Performance of German Credit Institutions in 1997". *Monthly Report*, August, pp. 27-57.
- Domanski, D. (1997): "Disintermediationstendenzen im deutschen Finanzsystem und ihre Auswirkungen auf die Rolle der Kreditinstitute – Eine Bewertung aus geldpolitischer Sicht", in B. Gahlen, H. Hesse and H.-J. Ramser (eds.), *Finanzmärkte, Wirtschaftswissenschaftliches Seminar Ottobeuren*, Bd. 26, pp. 271-90.
- Domanski, D. and H. Neuhaus (1996): "Bond Market Volatility in Germany: Evidence, Causes and Identification", in *Financial Market Volatility*, BIS Conference papers, Vol. 1, pp. 113-28.
- Elsas, F. and J. P. Krahen (1998): "Is Relationship Lending Special? Evidence from Credit-File Data in Germany". Center for Financial Studies, *Working paper 98/05*.
- George, E. (1997): "Are Banks Still Special?" in C. Enoch and J. Green (eds.), *Banking-Soundness and Monetary Policy*, pp. 263-70.
- Hellwig, M. (1991): "Banking, Financial Intermediation and Corporate Finance", in A. Giovannini and C. P. Mayer (eds.), *European Financial Integration*, pp. 35-63.
- Kashyap, A. K. and J. C. Stein (1997): "The role of banks in monetary union: A survey with implications for the European monetary union". Federal Reserve Bank of Chicago, *Economic Perspectives*, Sept./Oct., pp. 2-18.
- Rajan, R. G. (1996): "Why Banks Have a Future: Toward a New Theory of Commercial Banking". *Journal of Applied Corporate Finance*, Vol. 9, No. 2, Summer, pp. 114-28.
- Stöss, E. (1996): "Enterprises' Financing Structure and Their Response to Monetary Policy Stimuli". Economic Research Group of the Deutsche Bundesbank, *Discussion Paper*, 9/96.
- Upper, C. (1998): "The International Portfolio Diversification Puzzle: Is the Home Bias Caused By Asymmetric Information?" European University Institute, *Discussion Paper*.
- White, W. R. (1998): "The Coming Transformation of Continental European Banking?" Bank for International Settlements, *BIS Working Papers*, No. 41.