

# The Impact of SMP and EMU on German Banking

by  
Günter Lang\*

## Structure

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
<b>2</b>	<b>THE BASICS: MARKET STRUCTURE AND PERFORMANCE</b>	<b>1</b>
2.1	Size and Concentration	1
2.2	Banking Technology: Economies of Scale and of Scope	4
2.3	Competition	7
2.4	Banking Performance	8
<b>3</b>	<b>REGULATORY FRAMEWORK</b>	<b>9</b>
3.1	Regulatory Framework prior to SMP	9
3.2	Main Single Market Programme	10
3.3	Remaining Barriers	11
<b>4</b>	<b>THE IMPACT OF THE SMP</b>	<b>11</b>
4.1	Bank Strategy: General Responses	11
4.2	Mergers & Acquisitions	14
4.3	Internationalization	17
4.4	Cost Changes: Scale, Efficiencies, and Input Prices	17
4.5	Revenue Changes: Quantities, Prices and Margins	19
<b>5</b>	<b>EMU AND THE BANKING SYSTEM</b>	<b>21</b>
5.1	Effects of EMU on Banking Activities	21
5.2	Banking Sector Responses	22
<b>6</b>	<b>CONCLUSION</b>	<b>23</b>

\* Günter Lang, University of Augsburg, Department of Economics, D-86135 Augsburg, Germany, phone +49-821-598-4195, email guenter.lang@wiwi.uni-augsburg.de. Helpful comments from Hans-Helmut Bünning are gratefully acknowledged.

## **1 Introduction**

This study assesses the impact of the single market program (SMP) and the European monetary union (EMU) on the German banking sector. As in contrast to manufacturing or agriculture, many industries within the services sector could seal themselves off the competitors in foreign countries up to the mid-eighties. Starting with the June 1985 White Paper of the European Commission (*EC 1985*), a bundle of measures was taken to establish a single banking market in the European Union. Although not part of the SMP, the introduction of the EMU in 1999 is a further step into this direction. Heterogeneous currencies are converted into a homogenous “good” – with probably important consequences for those firms dealing with this “good”.

To evaluate the specific impact of both programs on the biggest European banking market, Germany, in the following four steps are undertaken. Chapter 2 describes the German banking market from the perspective of the structure-conduct-performance paradigm. The technology of the banking industry is also discussed in this part. In a second step, important benchmarks of the current regulatory framework as well as its historical development are introduced (chapter 3). On the basis of the foregoing discussion, chapters 4 and 5 try to evaluate the impact of SMP and EMU on German banks. The focus of these chapters is on the change in competitive viability due to a single European banking market, which is requiring strategic responses from the banking firms. Finally, chapter 6 sums up.

## **2 The Basics: Market Structure and Performance**

### **2.1 Size and Concentration**

When analyzing the German banking industry, the first striking feature is the more than proportional weight within the EC banking market. This can be illustrated by the following figures: In Germany are currently living 22% of the EC population with an income share of about 25%. Total assets of the credit institutions are summing up to more than 27% of the EC value, as well as the number of branches, however. The greatest difference is in the number of banks, with currently 39% of all EC institutions being German banks. One of the most important characteristics of the German market, its fragmentation, can be seen from the last mentioned number.

*Table 1:*  
Size of the German Banking Market

	<b>1985</b>	<b>1990</b>	<b>1995</b>	<b>1998</b>
Number of banks	4740	4720	3785	3403
- Commercial	245	332	332	327
- Savings	590	769	624	594
- Cooperative	3655	3042	2591	2249
Number of branches	39925	44345	48224	45227
Number of branches per 1000 capita	0.61	0.63	0.59	0.55
Assets as percentage of GDP	185%	220%	223%	256%*

*Figures since 1990 include Eastern Germany.*

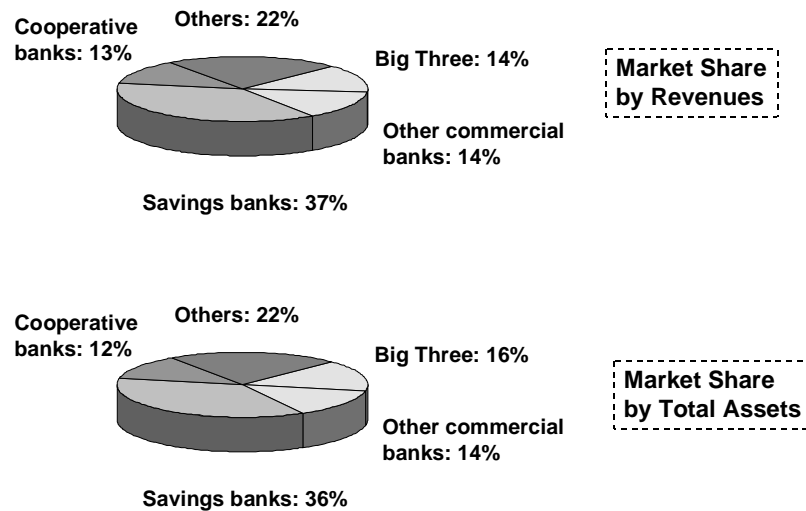
*\* Figure for 1997.*

*Source: Deutsche Bundesbank.*

*Table 1* gives some details about size and structural changes of the German market. Obviously, a significant decline in the number of independent firms occurred since 1990, which was mainly driven by mergers between cooperative banks and between savings banks. For cooperative banks alone more than 1500 mergers could be observed since 1985. Surprisingly, bankruptcies of credit institutions are totally irrelevant for this concentration process. Because the reduction in the number of firms was partially offset by an increase in the branching network, the total number of banking offices in 1998 is about the same as in 1990. Compared to other EC member countries, the network of banking branches is relatively intense and often cited as the main reason for an „over-banked“ Germany.

In spite of the impressive merger wave, the German banking market is showing the lowest concentration level within the EC. In particular, the three largest credit institutions represent just 16% of total assets, slightly up from 12% in 1990. For comparison, the CR-5 EC average stands at 53%, with a negative correlation between country size and concentration (*ECB 1999, pp. 23 ff.*). Interestingly, although the commission business does not find its expression in the value of assets, there is no significant difference in calculating market shares by total assets and revenues, respectively. Details about the latest market shares are given in *Figure 1*.

*Figure 1:*  
Market Shares by Revenues and by Assets



*Figures for 1998; savings banks and cooperative banks including head organizations. Revenues calculated as interest plus commission revenues. Source: Deutsche Bundesbank.*

As for the owner structure of the banking firms, commercial banks as well as cooperative banks are private-owned, while savings banks and some of the „other banks“ are state-owned. Traditionally, savings banks play a dominant role especially in the urban areas, whereas cooperative banks are strong in rural regions. In opposite to Italy and France, there is no serious discussion about privatizing savings banks.

Another important feature of the German banking system is the wide-spread principle of universal banking. With the exception of „other banks“ in *Figure 1*, the market is consisting from universal banks. Even small cooperative banks are offering a broad spectrum of products, ranging from retail and wholesale banking to the commission business like brokerage or the supplying of insurance contracts. Many commercial banks, as well as the head organizations of the savings banks and the cooperative banks<sup>1</sup>, are furthermore engaged in investment banking.

Finally, when considering the market share of foreign banks, their role seems to be marginal one. The about 150 branches and subsidiaries of foreign institutions in Germany

---

<sup>1</sup> These head organizations consist from banks at the state or at the federal level („Landesbanken“, cooperative central banks) as well from associations. The last-named are entrusted with tasks in the field of supervision, deposit insurance and lobbying.

are covering a market share of just 4.4%. This figure is clearly underestimating the competitive pressure from abroad, however. For example, foreign banks in London or Luxembourg play an important, if not dominant role in some fields of off-balance sheet activities. Furthermore, because of relatively high income tax rates, considerable amounts of privately owned fortune may be hidden at accounts of foreign banks outside Germany.

## **2.2 Banking Technology: Economies of Scale and of Scope**

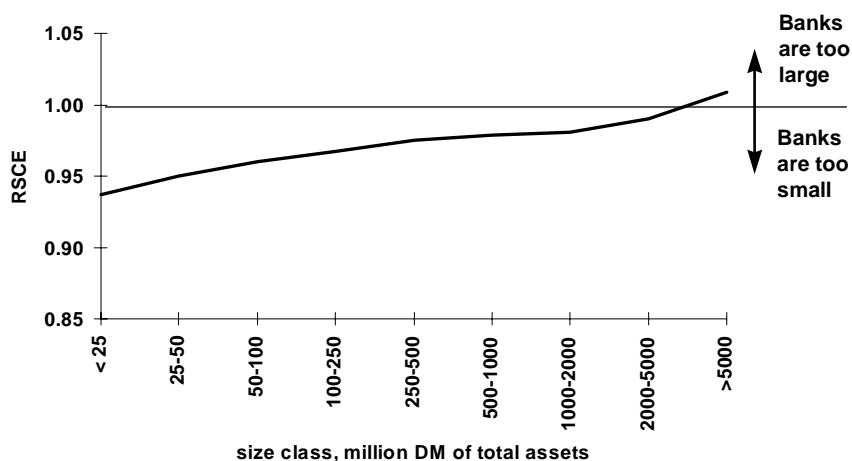
When discussing the structure of the banking sector, the technological characteristics of this sector play an important role. Especially the optimal firm size is at the core of interest. For example, if one main impact of the SMP is an increase of competitive pressure and if there are economies of scale, then mergers and acquisitions are a suitable strategy to reduce costs by exploiting size advantages. However, if the optimal size of a credit institution is relatively small, the conclusion would be that no cost incentive for external growth is existing.

Unlike in the U.S. and in some other European countries, however, there are only a few empirical papers dealing with this question for Germany (see *Berger and Humphrey, 1997*, for an overview). Important exceptions are the EC Review (*EC 1997*), where some estimations can be found, and the papers of *Altunbas and Molyneux (1996)*, *Lang and Welzel (1998)*, or *Schure and Wagenvoort (1999)*. As a general result of these studies, the existence of scale economies finds strong support, with some differences about the threshold from which diseconomies can be expected.

To be more specific, for evaluating the relationship between size and costs the concept of the ray scale elasticity (*RSCE*) can be used. This popular measure tells us by which percentage total costs of a bank are increasing if all output quantities are growing by one percent. *Figure 2* provides condensed information on the measure *RSCE* from the estimations of *Lang and Welzel (1998)*, which are based on a representative sample consisting from about 1500 German banks. The number of observed outputs per firm is five. From this figure we see that economies of scale diminish with increasing size and that banks in the largest class already face moderate diseconomies. These results therefore indicate an average cost curve with an optimal size of a German bank somewhere in the range of 2 to 5 billion DM of total assets. This is considerably higher than the threshold usually identified with U.S. data, which is probably mainly due to differences in the regulatory environment. At the same time this optimal size is lower than other studies using European data tend to find (*Altunbas and Molyneux, 1996; EC, 1997*). The recent paper of *Schure and Wagenvoort (1999)* is confirming the results from *Lang and Welzel*,

however. Furthermore, there is strong evidence in favor of an L-shaped average cost curve: Being too large is not as costly as being too small.

*Figure 2:*  
Ray Scale Elasticity by Bank Size

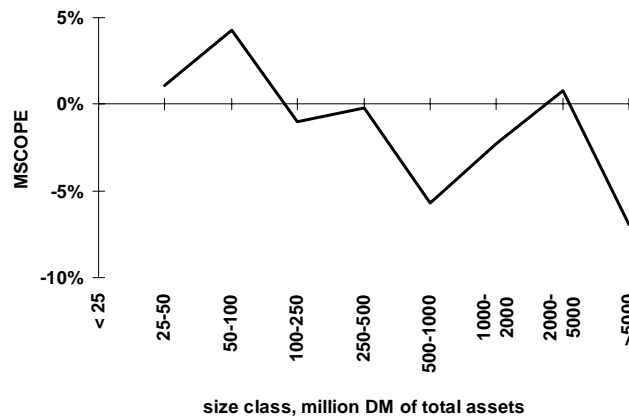


*Scale economies calculated at mean size for each size class. Scale economies are evident if RSCE takes a value of less than one.*

*Source: Lang and Welzel (1998).*

Aside from economies of scale, the question for economies of scope also arises. This is of special interest for the German market, because the domestic banks traditionally are universal banks with a broad output spectrum. It is not immediately clear, however, if there is a cost advantage in comparison to specialized institutions. In many other countries the brokerage business as well as the investment banking business is separated from retail and wholesale banking. Therefore, the cost relationship between the (core) intermediation business and the commission business has to be evaluated.

*Figure 3:*  
Economies of Scope by Bank Size



*Economies of scope evaluated at mean size for each size class. Positive values indicate a cost advantage of a parallel expansion of the interest and the non-interest business.  
Source: Lang and Welzel (1998).*

To measure existence and intensity of economies of scope, the *Kolari and Zardkoohi (1987)* indicator (*MSCOPE*) can be employed which compares a large with a small bank. *MSCOPE* is then comparing the cost effects from two alternative strategies: Expansion of all outputs of the small bank according to the proportions suggested by the output structure of the large bank, or, secondly, expansion only of the intermediation or the commission business. *MSCOPE* gives the percentage cost difference between both growth strategies, with positive values indicating a cost advantage from expanding the whole product range. In contrast, negative values are pointing towards diseconomies of scope, because in this case a specialized expansion would improve the cost situation.

Interestingly, the empirical estimations do not support the German universal banking system. As can be seen from *Figure 3*, which provides information on whether or not there are economies of joint production between the intermediation and the commission business, only small banks can realize a cost advantage. As for larger banks, they suffer from cost neutrality or even a cost disadvantage. Therefore, by only viewing on the cost side, a split up into two units - retail and wholesale banking versus a commission unit - should not be hindered. More favorable are the estimations for the cost relationship between the different intermediation outputs, where significant economies of scope have been found (see e.g. *EC 1997, p. 88ff.*).

Finally, before turning to the competitive conditions of the German banking market, it should be noted that economies of scope might also arise from an output diversification effect as well as from additional customers, which enjoy an advantage from being

served with several products at one bank. This allows universal banks to extract some of the additional consumer surplus by charging higher fees (cf. *Berger et al., 1987, pp. 504-505*). Traditional cost or production functions are not able to capture these effects, however.

### **2.3 Competition**

Characterizing the type and intensity of competition is a difficult task, and no general answer on this problem should be expected. Some important landmarks of the competitive situation can be clearly fixed, however. First of all, as will be described in some more detail later, the regulatory framework of the German banking sector was never as restrictive as in some other member countries of the European Community. For example, the freedom of establishment or the market mechanism for deposit and loan rates were introduced earlier than in many other member countries (see *EC 1997, p. 12*, for an overview). Secondly, competition within the savings banks group and within the cooperative banks group is negligible because their head organizations care for a regional demarcation. A third aspect to mention is the spatial distribution of the commercial banks, which have concentrated their network of branches in urban areas. At least for the retail banking segment competition could therefore be more intense in the cities than in rural regions. And fourth, as for the competition for deposits, life insurance companies are by far the most important non-bank rivals. This can be explained by a discriminating income tax system, giving strong incentives to individuals for signing a capital-based life insurance contract. Actually, about 65% of all German households have signed at least one contract of that kind. More than 30% of all monetary assets are entrusted to insurance companies (*Statistisches Bundesamt, 1999*).

Turning to a more sophisticated point of view, some theory-based work has been done for the German banking industry. *Lang (1996)* for example is testing the efficiency hypothesis, which is arguing that profitability differences between firms can be explained by cost differences. Market prices are assumed as exogenous with this hypothesis. Furthermore, from a dynamic point of view, a market share erosion of the relatively inefficient (high-cost) firms can be expected. However, the results indicate only limited support for the efficiency hypothesis, with an exception being the small cooperative banks. For these banks efficiency differences explain up to 37% of the profitability variance, whereas for credit banks and savings banks  $R^2$ -values of less than 10% are measured. The relationship between efficiency and market shares tends to be even weaker. On the other hand, the assumption of a monopolistic respectively a perfect collusive behavior has been rejected, too (*Lang, 1997; Molyneux et al., 1994*).



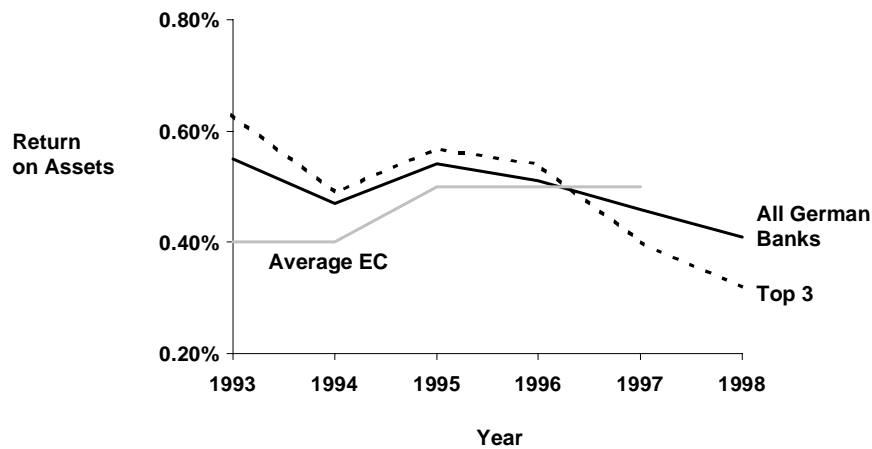
Putting all these results together, the market imperfection of the finance sector is confirmed. Although far from a monopoly, product differentiation and transaction costs either allow for the existence of inefficiency or (in a few cases) for high profits. However, because of improved information technology, at least for standard outputs of the banking industry a tendency towards intense competition has started. The establishment of low-cost direct banks without any branching network is strengthening this trend. Only for consulting intense products or for special customer groups (older people, customers with a lower educational level) the persistence of market power should be expected.

## **2.4 Banking Performance**

As mentioned before, German banks were in general not able to transfer the existing degree of market imperfection into higher profits. At the opposite, low profitability is a main issue in the current strategic debate (*Economist 1999a, p. 14 f.*). Whereas banks in the UK or in the US are reaching a return on equity (ROE) of more than 20%, German banks can realize a modest 12%. Turning to the return of assets (ROA), the relative position of German banks has only slightly improved: *Figure 4* indicates that the German ROA was above the EC average before 1996, but dived below the EC level during the last two years. This trend was even more pronounced for largest three banks, for which the ROA has been cut in half since 1993.

Where are the reasons for this low profitability of the German banking sector? Clearly, as will be discussed in more detail later, the competitive pressure has been increased with negative consequences especially for the interest margin. As the *Deutsche Bundesbank* is additionally stressing, however, the income statements are indicating a sharp increase in the cost of data processing. In 1998 only 56% of the overhead (non-interest) costs stemmed from wages, compared to about 70% in 1980. This trend occurred mainly due to high expenditures for information technology. As a result, the overhead costs per unit of total assets could be reduced only slightly, and this reduction was by far over-compensated from the declining interest rate margin.

Figure 4:  
Return on Assets



Return on assets: Net income before extraordinary items and taxes as percentage of total assets.  
Source: Deutsche Bundesbank; ECB 1999.

### 3 Regulatory Framework

#### 3.1 Regulatory Framework prior to SMP

Traditionally, the banking industry differs substantially from other industries with regard to public policy. As a main reason, the fear from bank runs (systemic risk) as well as the protection of depositors have to be mentioned. From the perspective of the market failure literature, these negative effects are driven by asymmetric information between the management of the firm and the depositors (see *Neuberger, 1998*, for an overview about the microeconomic theory of banking and its empirical verification).

Post-war regulation of the German banking industry can be differentiated into three phases: Transition from a state-based to a federal regulation system, coupled with important steps towards deregulation (i); tightening of the control mechanism and expansion of the deposit insurance as a consequence of the „Herstatt“-bankruptcy in 1974 (ii); and - starting with the implementation of the consolidation surveillance into German law in 1984 - a series of reforms towards a single European banking market.

When trying to characterize the regulation framework prior to the SMP, it can be defined as liberal with respect to some important items. First of all, price regulations such as ceiling interest rates on deposits (e.g. „Regulation Q“ in the US) were not existent. At least partially, this is a consequence of free cross-border capital movements which had put the German Mark currency region into direct competition with other currency regions. A second important feature is the non-existent separation of commercial from

investment banking and the abstaining from geographical restrictions. Instead, public policy has focused on regulating bank entry, the introduction of internal control mechanism („four-eyes-principle“), and - most important - regulating bank portfolios (liquidity rules, capital rules etc.).

Finally, the significant role of private regulation through the head organizations of the three banking groups has to be stressed. These head organizations reduce competition within the cooperative and within the savings banks group by regional demarcation as well as by retail price recommendations. Additionally and more important, the federal regulator is closely cooperating with the head associations referring to tasks which are crucial for the stability of the banking system. For example, the yearly statements of the cooperative as well as of the savings banks have to be supervised by the respective head organization. Furthermore, the task of protecting depositors is delegated from the public regulator to the bank associations: Internal deposit insurance systems for the three banking groups are existing, which are managed by the groups themselves.

### **3.2 Main Single Market Programme**

From the view of German banks, the SMP can be characterized more a regulatory harmonization process than a deregulation. The most important changes within the regulatory framework is the realization of the Basle Capital Accord and the Second Banking Directive. Both were introduced into national law by 1992. Especially the Second Banking Directive which establishes the principle of home country control was quite important for German banks because of the relatively high degree of outward internationalization. More details to the legal changes can be found in *EC 1997*.

The process of regulatory harmonization can be considered as finished with the sixth amendment of the „Kreditwesengesetz“ and the passing of a deposit insurance law. Both changes occurred in 1998 and transferred European directives into the national legislative. With regard to the „Kreditwesengesetz“, the different treatment of securities firms and credit institutions was eliminated. This step was especially important for the German financial system where universal banks and securities firms are direct competitors, but the last mentioned were less tightly regulated. With regard to the deposit insurance, each non-institutional customer is now guaranteed 90% of his claim against a bankrupt institution up to a limit of 20000 EUR. For home customers the protection goes beyond this limit, however, because the group internal deposit insurance systems are further existent and guarantee deposits up to 30% of the firms equity. Branches and subsidiaries in other EC countries are not allowed to export this additional insurance to foreign customers.

### **3.3 Remaining Barriers**

In spite of an extensive realization the Single European Banking market, there are some remaining barriers worth to be mentioned. First of all, and perhaps most important, the market outcome may be disturbed by asymmetric conduct of the regulatory authorities. Especially with regard to multi-national banking giants it seems questionable if national regulators are an appropriate answer. Different interpretations of the legislative framework give incentives to bank managers to choose their home location corresponding to their own preferences. One less stringent regulator in one of the EC member countries may be sufficient to generate extremely high competitive pressure within the single market. The probability for a EC-wide bank run and therefore the systemic risk would be increasing.

Similar problems arise from the tax systems, where German banks clearly face a strong disadvantage at the retail level. Because of extensive income tax rates, many customers decided to open an account at a foreign bank outside German to hide their interest revenues. Of course, this kind of competition between countries is important for factor allocation and should not be completely eliminated. But it could make sense to avoid a destructive run for tax-reduction between states by the implementation of a (low) EC-wide source-tax on interest income.

## **4 The Impact of the SMP**

### **4.1 Bank Strategy: General Responses**

While analyzing the impact of the SMP to banking, it is important to differentiate between the process of deregulation and, second, the harmonization of the regulatory environment. Although both processes are strongly connected and were taking place at the same time, the consequences for the banking firms within the European Union are quite different. On a high level of abstraction, two groups can be differentiated: EC members with a relatively free financial market prior to the SMP, and those with a tight public supervision. Up to the mid-1980es, Germany, together with UK and Netherlands, were in general the least regulated member countries in the EC. This statement can be substantiated by the non-existence of public control over interest rates or international capital flows, which were the most important restrictions in other states. On the contrary, Spain, Portugal, Greece and Belgium could be classified as the most regulated countries. Because of that constellation, harmonization can be considered as more important than deregulation for the first group.

Table 2 is confirming this assumption. The postal survey results are indicating that margins are declining in Germany as well as in the EC, with the impact of the SMP being less important for Germany than for other EC countries. However, the extent to which the SMP is claimed to be responsible for these changes is in general small: Even at the EC-level, only one of six banks is assessing the contribution of the SMP as „to a large extent“.

Table 2: Competition and SMP

	Change in margin for different types of loans			Extent to which the SMP is responsible for these changes			
	Loans to small firms	Retail customer loans	Mortgage loans	not at all	slightly	to a large extent	totally
<b>Germany</b>	-26	-8	-19	5%	95%	0%	0%
<b>EC</b>	-24	-21	-16	30%	54%	16%	0%

\* -50 is „large decrease“, -25 is „small decrease, 0 is „no change

Source: Postal survey.

A much more important source for the increasing degree of competition is a trend towards disintermediation. This means that borrowers are directly lending from capital markets, while investors are facing attractive alternatives to bank deposits, e.g. money-market funds or mutual funds. The spread of information technology is clearly supporting this trend. With the deregulation of the European banking markets, disintermediation maybe somewhat slowed, but - as can be seen from the US - the general tendency will not be reversed. Although growing faster than the economy, the relative importance of credit institutions decreased in favor of investment firms (*ECB 1999, p. 16*).

The process of regulatory harmonization, with the introduction of common capital adequacy rules as its core, is supporting this process of disintermediation, too. Capital adequacy means that for all loans to non-financial firms a full 8% equity has to be put aside by banks. However, this is an important disadvantage of the traditional banking system against non-bank financial institutions which did not face any capital requirements. Furthermore, from the view of blue-chip borrowers, the incentive for a direct use of the capital market is further increasing (*Economist 1999a, p. 13*).

Turning from these general considerations to the specific challenges for German banks, they may assess the Single Market Program more as a change than a threat. As in opposite to many of their EC rivals, German banks entered the second half of the eighties with experience in competition. One positive side-effect of this history is a relatively low level of bad loans, which is an important problem in some other countries. A second

strategic advantage from the competitive environment was the possibility to gradually adapt to the new market conditions. There was no need for radical changes in the management strategy.

As a disadvantage, the German banking market can - up to today - be characterized as a fragmented banking system, in which small cooperative banks and mid-sized savings banks control significant market shares (see *Figure 1*). Competition between these groups is one reason for the low profitability of German banks relative to most other countries. Furthermore, the relative competitive position between private commercial banks, private - but non-listed - cooperative banks, and state-owned savings banks has changed with the process of regulatory harmonization. Most important, cooperative banks and savings banks do not have access to the equity market, but can accumulate equity mainly by non-distributed profits. Facing the Basle capital accord with its emphasis on equity, this is a clear disadvantage against listed institutions. The only exception are the head organizations of the savings banks („Landesbanken“), which could raise equity by the transfer of real estate from the state governments. In contrast to the rest of the banking system, their competitive viability is even getting improved by the process of disintermediation: Only these state-owned banks got a Triple-A Rating from Moody's because of governmental guarantees for all liabilities. This rating is important for the conditions when raising funds on global capital markets, however.

Aside from these general considerations, the strategic responses of the German banking system to the SMP cover three main areas: a) cost reductions, b) changes in the product range, c) changes in market behavior.

The first strategic response, cost reduction, took various forms. Most important was an intense merger wave between small banks, a reduction of the branching network, and a substitution of labor by capital. As for M&A's, they are discussed in the next section. The branching network of the German banking was cut from 0.61 branches per 1000 capita in 1985 to 0.57 in 1997, which is well above the numbers for France (0.44), UK (0.32) or Italy (0.44), however. Parallel to this reduction a substitution of labor by capital took place, best illustrated by the expansion of ATM network. From 1990 to 1997 the number of ATM's per 1000 capita increased from 0.18 to 0.50, significantly above the figures for Italy (0.44) or the UK with 0.38 (see *ECB, 1999* for all data).

As a second strategic response, changes in the product range could be observed. That should not be interpreted as an abandoning of the universal banking concept, which is typical for the German banking system. However, facing lower margins in the traditional intermediation business, the expansion of the fee and commission output was one

of the main goals especially for large institutions. This strategy allowed them to participate in the increasing volumes on the securities markets. The very specialized high-margin businesses like IPO's, M&A's or international refunding is further dominated by American investment banks, however (*Economist 1999a, p. 18*).

In contrast, another field of activity was clearly reduced. The big German banks are prominent for their dual role as lender and owner. Deutsche Bank, e.g., is one of the world biggest industrial holding companies with assets currently worth about 45 bn DM. The portfolio of Dresdner Bank is representing a market value of 25 bn DM. These traditional links are now loosening: Since 1994, Deutsche Bank has reduced its stake in 18 from its 20 largest holdings. Similar activities can be observed for other banks. One reason for this retreat are the currently high asset values, allowing large extraordinary gains from these investments. As a second reason for the concentration on the core banking business, aspects of risk diversification may be considered. The dual role as lender and owner leads to a double burden if a company is getting into trouble. A reduction in firm stakes allows for a broader diversification of the portfolio risk which is important for the credit rating (*Economist 1999b*).

Changes in market behavior consist from pricing and risk behavior. Here it is important to note that enhanced price transparency, accompanied by increasing competitive pressure, is reducing the possibilities for cross subsidies. An important example in the retail business was the subsidization of payment transactions by the interest business. As already *Priewasser (1985, p. 151 f.)* was mentioning, instead a more differentiated, division-orientated price structure has to be established. Actually, this change in the price schedules has taken place. The creation of direct banks by the largest commercial banks, which primarily act as brokerage firms, is a further step into product differentiation. A second goal is the strengthening of the commission business.

Finally, it should be noted that the Basle capital accord may have a perverse effect on the risk behavior of some banks. Currently, for all loans to non-financial firms the full 8% equity has to be put aside. This reserve requirement is independent from the credit quality of borrower. As a result of this lacking differentiation, the incentive for running risks has increased (*Economist 1999a, p. 13; Rode and Moser, 1999*). It is questionable if the planned loan-quality regulation can appropriately deal with this effect.

## **4.2 Mergers & Acquisitions**

Mergers and acquisitions reduced the number of independent banks from about 4700 in 1990 to 3400 at the end of 1998 (see *Table I*). Two main types of mergers can be differentiated: Strategic mergers with at least one large partner and, second, defensive merg-

ers between small banks. Important examples for strategic mergers are the mega-mergers of *Bayerische Hypobank* and *Bayerische Vereinsbank* (both in Germany) or the acquisition of *Bankers Trust* (US) by *Deutsche Bank* (Germany). Aside from cost considerations, the increase in market power, international expansion or a better access to equity markets are the main reasons for strategic mergers. As for defensive mergers, these types of mergers are by far dominating the merger activity of the German market. They are primarily motivated by cost considerations or - in a few cases - by the need to overcome solvency problems from bad debt. Economies of scale, which are in no doubt existent for small banks (see chapter two), are giving theoretical support for defensive mergers.

The relationship between the completion of the single European market and M&A activity seems to be weak. Obviously, the increasing competitive pressure from an integrated European banking market may be interpreted as incentive to reverse the decline in profitability by M&A's. Especially for small banks - and hence for the bulk of mergers - other reasons than the SMP may be more important, however. For example, the more than proportional increase in the costs of data processing or the change in consumer demand towards securities are important sources of economies of scale. External growth by mergers can help to exploit the advantages of being large, but these advantages are not related to the SMP.

*Table 3* is confirming this cautious view on the causality between M&A's and the Single Market. For most banks in Germany as well as in the EC the opening of subsidiaries is considered more important than an increase in the merger activity.

*Table 3: Company Activity and SMP*

	Change in activity in other EC countries*		Extent to which the SMP is responsible for these changes			
	Merger activity	Opening of subsidiaries	not at all	slightly	to a large extent	totally
<b>Germany</b>	5.2	29.8	4%	67%	21%	0%
<b>EC</b>	2.9	17.7	15%	58%	23%	0%

\* 50 is „large increase“, 25 is „small increase, 0 is „no change

*Source: Postal survey.*

Shifting the focus to strategic mergers, the completion of the Single Market may indeed be a main reason for repositioning the own bank. Here it is important to note that the German financial sector is one of biggest in absolute terms, but in 1994 only three German banks were among the twenty leading European banks (measured by total assets).



Because of two mega mergers, this number has increased to four, with *Deutsche Bank - Bankers Trust* now being the largest bank in world. Pan-European mega mergers have not occurred yet.

Up to that point, a positive effect of M&A's on costs and profitability has been assumed as given. As *Lang and Welzel (1999)* show, however, cost reductions from defensive mergers are far from sure. Based on all 283 mergers between Bavarian cooperative banks which appeared between 1989 and 1997, they empirically estimate two potential sources of merger-based cost reductions: Size effects from economies of scale and of scope, and, second, X-efficiency gains from post-merger restructuring efforts.

One of their main conclusions is that favorable size effects can only be expected if at least some of the branches are closed in the post-merger phase. If the merged unit is not willing to reduce the number of branches, the predicted cost changes lie within a small interval ranging from -4% to 9%, but are zero at average. Aside from the cost-intense network of branches, a poor mix of the output bundles of the merging banks are the main reasons for these pessimistic predictions.

With respect to the post-merger performance, there is no evidence that the merged unit could exhibit X-efficiency levels above those of the separate units. If the merging banks exhibit different levels of X-efficiency, in most cases the more efficient merger partner failed to transform its management advantages to the weaker partner. Instead, the empirical results point to a leveling off in efficiency differences after mergers took place. Even for mergers which took place five or eight years ago no X-efficiency gains could be observed.

As for (strategic) mega-mergers, the consequences for size efficiency can be expected still more negligible. The *Hypo-Vereinsbank* mega-merger may be considered as an exception, because in this special case the regional neighborhood of many branches allows for a significant reduction of the branching network without the loss of market shares. In general, however, the optimal scale of a bank is far below the scale of each individual bank before the merger (see chapter two). More promising for profitability is the output side: As *Akhavain et al. (1997)* point out for the US-market, there may be a greatly enhanced profit efficiency because of a shifting in the product mix and enhanced possibilities for risk diversification. *Vander Venet (1996)* is supposing well exercised managerial efficiency programs in the case of mega-mergers among equal partners. Finally, strategic mergers have a clear positive impact on input prices. The absolute size of a bank is important for the conditions at which funds from the securities market can be raised.

### 4.3 Internationalization

The degree of internationalization may be seen from different perspectives: Cross-border M&A's and joint-ventures, establishment of subsidiaries or branches (direct investments), and - finally - lending/borrowing in foreign currency and to non-residents. With regard to the latter, the ECB is pointing to a steadily growing importance of the international banking business for EC banks (*ECB 1999, p. 21ff*). Somewhat surprisingly, EC banks are even taking the leading role as international lenders to emerging, transitional or developing countries. No numbers for individual countries are given, however.

More detailed information is available for the establishment of subsidiaries and branches, which is presented in *Table 4*. The German banking system is currently raising more than 30% of its total assets from foreign branches and - to a lower degree - from foreign subsidiaries. Actually, with about 300 branches or subsidiaries in other countries, the outward internationalization of the German banking sector is more intense than in any other EC member state. Especially noticeable are the high growth rates of the activities of foreign branches, which are by far outperforming foreign subsidiaries. It can be assumed that the Second Banking Directive, which introduced the principle of home country control for foreign branches, is one of the main forces for this pattern. The success from this regulatory milestone can also be observed in other member countries: More than 450 cross-border branches are currently established in the European Community, up from 300 in 1992.

*Table 4: Outward Internationalization of the German Banking Industry 1998*

	foreign subsidiaries		foreign branches	
	number	assets as % of total assets	number	assets as % of total assets
in EC countries	81 (+40%)	7.4% (+20%)	94 (+42%)	12.6% (+158%)
- Luxembourg	30 (-3%)	3.8% (-7%)	32 (+10%)	1.4% (+23%)
- else EC	51 (+89%)	3.6% (+71%)	62 (+68%)	11.2% (+198%)
in Non-EC countries	56 (+40%)	0.9% (+4%)	89 (+31%)	9.2% (+146%)
<b>Total</b>	<b>137 (+40%)</b>	<b>8.3% (+19%)</b>	<b>183 (+37%)</b>	<b>21.8% (+95%)</b>

*Percentage change against 1993 in parentheses.*

*Source: Deutsche Bundesbank.*

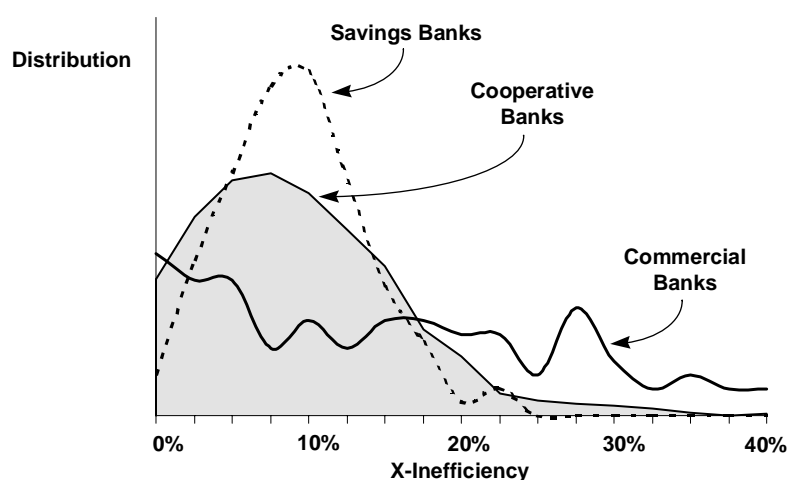
### 4.4 Cost Changes: Scale, Efficiencies, and Input Prices

Aside from M&A's, cost reductions may also be realized from other sources, for example internal growth towards the optimal banking scale (see chapter two). Actually, however, there cannot be observed any trend towards a more homogenous size distribution

around this optimal scale. To illustrate that point, the average per-bank growth-rate of 13.9% (1990 to 1998) in total assets should be kept in mind. Cooperative banks, which are typically far below the optimal firm size, could realize a yearly per-bank growth rate of just 11.8%, however. Even lower was the growth of savings banks with 7.7% per year. Credit banks, which are typically far beyond the minimum optimal scale, enjoyed the healthiest growth rate with 15.3% p.a. Summing up, the size difference between cooperative banks and savings banks decreased, whereas the spread between these groups and the credit banks even increased. This last result is in clear contrast to a hypothesis that the completion of the European market will reduce the heterogeneity in bank sizes.

Turning the focus to X-inefficiencies, we find one possible explanation for this somewhat surprising result: Compared to the cost disadvantage from having chosen the wrong size, managerial X-inefficiency has a much more negative effect on the cost situation. This impressive conclusion can be drawn from the existing empirical work on the German banking industry (see e.g. *EC 1997, p. 92; Lang, 1996; Tebroke and Wolf, 1998*). As illustrated in *Figure 5*, a cost reduction in the dimension of 10% from a switch to the best-practice technology is realistic for the majority of German banks. The main source for this deviation from the cost frontier is a too large staff. It is important to note that cost savings from lowering input prices or from a reduction of the branching network are not included in the X-inefficiency measure, because only input quantities are assumed to be under the control of the management.

*Figure 5:*  
Distribution of X-Inefficiency



*Estimated percentage differences between actual and minimum cost.*  
*Source: Lang 1996.*

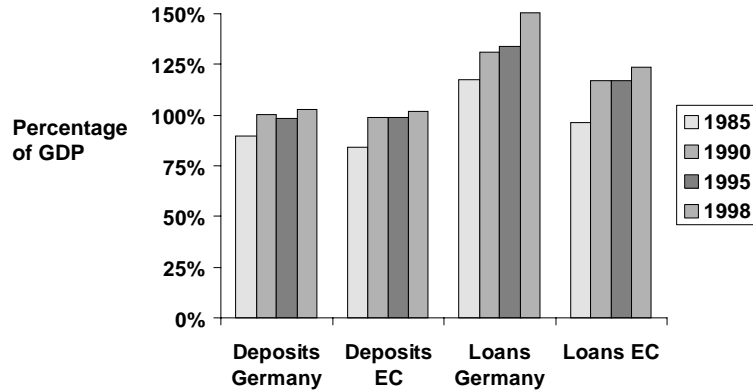
Within the context of the SMP, the question for an occurring trend in X-inefficiency is of obvious interest. As a key hypothesis, the increasing competitive pressure should have forced banking firms to reduce unit costs as far as possible. Actually, there is some empirical evidence that bank manager could reduce the level of X-inefficiencies since 1990 (*EC 1997; Tebroke and Wolf, 1998*; for cooperative banks *Lang and Welzel, 1999*). However, the improvement seems small in comparison to the existing cost saving potential.

With regard to input prices, the recent changes for German banks were less drastic than for banks in other EC countries, especially for those in the EURO zone. The general tendency in money market rates is downward since 1992, with interest rates in other countries approaching the lower benchmark which was set by the German mark. The margin between the rate paid to customers and the money market rate was decreasing due to increasing competition, but in a postal survey the SMP was made only slightly responsible for the higher competitive pressure (see also *Table 2*).

#### **4.5 Revenue Changes: Quantities, Prices and Margins**

The quantity growth of the non-commission business can be seen from *Figure 6*. Increasing ratios between deposits and the GDP as well as between loans and the GDP are a reliable indicator for an income elastic demand for these outputs. Obviously, the banking industry is offering attractive products, with the German market somewhat overrepresented in relationship to the European Community. Interestingly, the loan side could realize higher growth rate than the deposit side during the last years. In turn, the capital market got more important for refinancing the loan output.

*Figure 6:*  
Non-Bank Deposits and Non-Bank Loans as Percentage of GDP

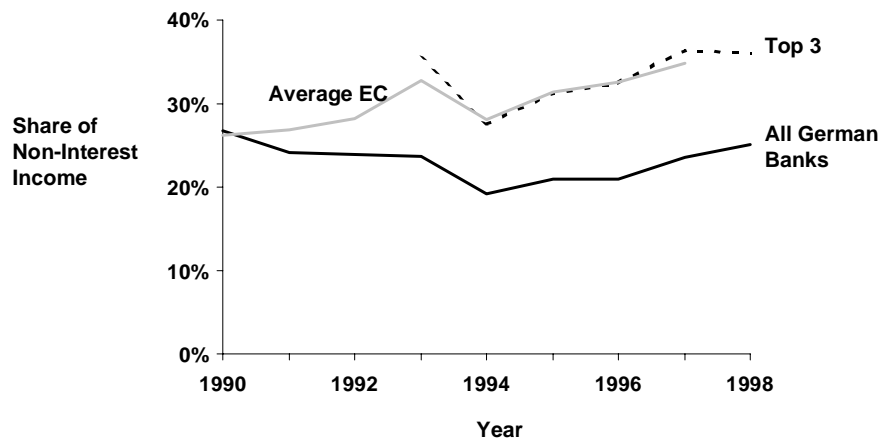


*EC-Data for 1997.*

*Source: Deutsche Bundesbank; ECB 1999.*

The described trend towards disintermediation finds its expression in increasing turnover on the securities markets. To some extent, as shown in *Figure 7*, banks could participate in these high growth rates. That is especially true for the EC level when considering a representative bank. In Germany, the largest three German banks could benefit, too. However, the smaller banks in Germany were not successful in strengthening the commission business: Their non-interest revenue shares in 1998 were somewhat lower than in 1990, and the observed spread against the top three as well as against the EC average even increased.

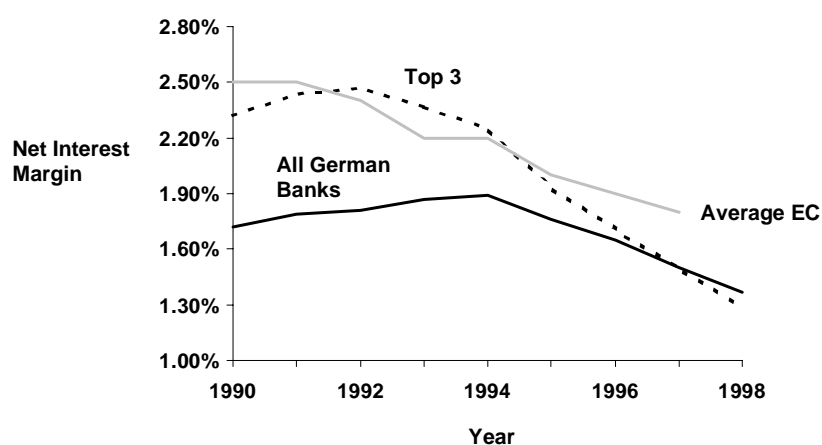
*Figure 7:*  
Non-Interest Income as Percentage of Total Income



*Source: Deutsche Bundesbank; ECB 1999.*

With regard to output prices and margins, both drastically decreased since 1990. *Figure 8* is illustrating this trend for the EC as well as for German banks. Most significant was the changing competitive environment for the large credit institutions, which topped the trend of shrinking margins. As in opposite to other EC members, disintermediation, technological changes (e.g. direct banking, better informed customers) and over-capacity are the main reason for increasing competition. The SMP has strengthened this trend, but it is unlikely that the SMP is solely responsible for the outlined situation.

*Figure 8:*  
Net Interest Margin



*Net interest income (interest revenues minus interest payments) as percentage of total assets.*  
*Source: Deutsche Bundesbank; ECB 1999.*

## 5 EMU and the Banking System

### 5.1 Effects of EMU on Banking Activities

The creation of a single European currency is affecting German banks more significant than the SMP, because the latter is more or less a harmonization-driven change in the regulatory framework. It is no easy task, however, to separate between the effects of the SMP, the EMU, and other changes in the market environment like growing disintermediation or technical progress. The reason for this difficulty is that in many aspects these forces work towards the same direction - growing competition within the banking sector and between banks and non-bank financial institutions. Therefore, as a first result, many of the outlined trends in the chapter before can be adopted.

There are some specific aspects of EMU on banking, which are worth to be outlined. Obviously, the discontinuation of the future and spot exchange between the EMU currencies and the general reduction in hedging needs is reducing revenues especially for

the larger banks. This negative influence on bank revenues will at least partially be offset by high growth rates of the integrated capital markets, however. The market capitalization of the EURO stock exchanges is now comparable to that of Japan (15% of the world market capitalization) and has therefore got attractive for international investors. Still better is competitive viability of the fixed-income sector, where EURO-denominated loans from domestic borrowers account for about 25% of the world market.

A more liquid EURO capital market will increase the transparency of prices for loans and deposits. Together with an increasing liquidity of this large onshore-market, the trend toward disintermediation and - as a consequence - shrinking margins will continue. Falling prices and increasing volumes have a clear positive impact on the borrowers as well as on the economies, whereas the outcome for the banks are not clear. Only larger banks - typically more than proportional engaged in the non-interest business - can be expected to fully participate from higher turnover of the securities market.

A specific advantage for German banks is the location of the European Central Bank in Frankfurt. This will strengthen the informal links between central bankers and commercial banks, which may be important for future decisions regarding monetary or regulatory policy. Furthermore, a positive impact on the competitive viability of Frankfurt as trading place for securities is probable. As a first indicator, Frankfurt has won the leading rank in the trade with the „Bund-Future“ from London.

Finally, when analyzing the effects of EMU on banking, the high relevance of the macroeconomic situation has to be mentioned. If governments and the European Central Bank could successfully create an environment consisting from exchange rate stability, low public deficits and low interest rates, then a significant positive effect especially for banks can be expected. Continuous and stable growth rates of the real economies are accompanied by high growth rates of the lending business, while loan losses because of firm defaults would be low. This interrelationship is due to the price and income elastic demand for bank loans.

## **5.2 Banking Sector Responses**

A more competitive environment will be the main consequence of the EMU establishment, and further pressure on banks' margins can be expected. Following *ECB 1999*, the response of the banking system will be quite similar to what is expected from the SMP: a) Improvements in services and procedures to reduce costs and enhance risk management, b) changes in the product range, e.g. a shift to consulting or internationalization,

and c) mergers and acquisitions, which are driven by cost aspects, or the goal to change the output mix and to expand in a geographical sense.

On the level of retail banking, the single currency will lower the preferences of customers for a home-country bank. Prices, conditions and quality will determine the decision of depositors, not the nationality. Not all banks will be able to attract foreign customers, however. Because of low transaction costs, direct banks will have a comparative advantage in the cross-border retail business. The large German credit institutions have well-established direct banks with attractive conditions, which could gain significant market shares in the international retail banking segment. As a consequence, large banks may in general redirect their retail business towards direct banking, where their technological leadership puts them in advantage compared to mid-sized or small banks. At the same time, the branching network of commercial banks can be expected to be scaled down. In spite of high growth rates of direct banking, that strategy would reduce the significance of retailing for large commercial banks. Savings banks as well as cooperative banks could fill this gap, at the same time losing market shares in the commission business.

Currently, the discussion about an appropriate response to EMU is strongly focused on mega-mergers, for example between Deutsche Bank and Dresdner Bank - number one and number two of the German banking industry. From a public point of view, the degree of concentration within the EC region can be regarded as low, and no obstacles from the antitrust authorities should be expected. However, the economic success of M&A's is neither guaranteed for defensive nor for strategic mergers. Although strategic mergers as in the cited example above offer wide opportunities for saving costs, increasing revenues and reducing risks, the negative evidence from empirical banking studies should be kept in mind. To be more specific, the significance of managerial X-efficiency is again to be stressed at this point. Unit costs are clearly more influenced from managerial quality than from the size of a bank. *Wheelock and Wilson (1999)* are confirming the importance of low X-inefficiency values for the US market, where the probability of bank failure was significantly higher for inefficient banks than for well managed firms.

## **6 Conclusion**

Summing up, the introduction of the EMU can be assessed as more important for the German banking system than the SMP because of the relative liberal conditions prior to the SMP. As a general result, the speed of the structural changes in Germany will further increase. Especially listed German banks are currently under pressure because of their relative low profitability. This can clearly be seen from a comparison of market capitalization and bank size, where Europe's largest institution - Deutsche Bank - can only



reach rank seven in market value. Similarly, some other large banks have reached an enormous size, but are valued significantly lower than comparable European competitors. For the majority of non-listed banks, their low performance can be seen from statistical material.

To maintain or enhance profitability in an environment of decreasing margins, all banks will increase their efforts to reduce costs. The reduction in capacity, especially in the number of branches and firms, will continue. According to empirical estimates, future efforts should be concentrated on an increase in managerial quality, which promises a higher potential for cost savings than scale economies. Increasing efficiency means a lower staff (about two thirds of the theoretical cost savings) and a lower, but more efficient capital input (buildings, data processing). The economy-wide gains from a more efficient input allocation will easily offset the possible loss of jobs in the banking industry.

On the product side, the disintermediation process is expected to speed up. As a consequence, the traditional system of universal banks could be somewhat changed: A partial retreat of savings as well as cooperative banks from investment banking, accompanied by increasing market shares in the branch-based retail business. For commercial banks, the consultation-intensive investment business is very attractive. On the retail sector, a specialization on direct banking allows for additional customers from abroad as well as for high growth rates in the brokerage business.

## **Literature**

*Akhavain, J.D., Berger, A.N., Humphrey, D.B. (1997), The Effects of Megamergers on Efficiency and Prices: Evidence from a Bank Profit Function, Review of Industrial Organization 12, 95-139.*

*Altunbas, Y., Molyneux, P. (1996), Economies of Scale and Scope in European Banking, Applied Financial Economics 6, 367-375.*

*Berger, A.N., Hanweck, G.A., Humphrey, D.B. (1987), Competitive Viability in Banking. Scale, Scope, and Product Mix Economies, Journal of Monetary Economics 20, 501-520.*

*Berger, A.N., Humphrey, D.B. (1997), Efficiency of Financial Institutions: International Survey and Directions for Future Research, European Journal of Operational Research 98, 175-212.*

*Deutsche Bundesbank, Monthly Reports.*

- EC – European Community (1985)*, Completing the Internal Market: White Paper from the Commission to the Council, COM(85)310, Luxembourg.
- EC - European Community (1997)*, The Single Market Review: Credit Institutions and Banking, Subseries II: vol. 4, Earthscan: London.
- ECB - European Central Bank (1999)*, Possible Effects of EMU on the EU Banking System in the Medium to Long Term, Frankfurt.
- Economist (1999a)*, Survey on International Banking, vol. 351/nr. 8115.
- Economist (1999b)*, German Banks Investments: Untangling, vol. 352/nr. 8132, 59-61.
- Lang, G. (1996)*, Efficiency, Profitability and Competition: Empirical Analysis for a Panel of German Universal Banks, ifo-Studien 42, 537-561.
- Lang, G. (1997)*, Wettbewerbsverhalten deutscher Banken: Eine Panelanalyse auf Basis der Rosse-Panzar Statistik, Jahrbuch für Wirtschaftswissenschaften (Review of Economics) 48, 21-38.
- Lang, G., Welzel, P. (1998)*, Technology and Cost Efficiency in Banking: A „Thick Frontier“-Analysis of the German Banking Industry, Journal of Productivity Analysis 10, 63-84.
- Lang, G., Welzel, P. (1999)*, Mergers among German Cooperative Banks: A Panel-Based Stochastic Frontier Analysis, Small Business Economics 13, 273-86.
- Molyneux, P., Lloyd-Williams, D.M., Thornton, J. (1994)*, Competitive Conditions in European Banking, Journal of Banking and Finance 18, S. 445-459.
- Neuberger, D. (1998)*, Industrial Organization of Banking: A Review, International Journal of Business 5, 97-118.
- Priewasser, E. (1985)*, Die Banken im Jahre 2000, Fritz Knapp: Frankfurt/Germany.
- Rode, M., Moser, C. (1999)*, Die neuen Basler Eigenkapitalanforderungen, Zeitschrift für das gesamte Kreditwesen 52, 720-724.
- Schure, P., Wagenvoort, R. (1999)*, Economies of Scale and Efficiency in European Banking: New Evidence, Economic and Financial Reports of the European Investment Bank: 99/01.
- Statistisches Bundesamt (1999)*, Einkommens- und Verbrauchsstichprobe 1998, Wiesbaden.
- Tebroke, H.-J., Wolf, J.B. (1998)*, Structural Variations in the Efficiency of German Banks: Empirical Evidence, mimeo University of Augsburg.

*Vander Venet, R. (1996), The Effect of Mergers and Acquisitions on the Efficiency and Profitability of EC Credit Institutions, Journal of Banking & Finance 20, 1531-1558.*

*Wheelock, D.C., Wilson, P.W. (1999), Why do Banks Disappear? The Determinants of US Bank Failures and Acquisitions, to be published in: Review of Economics and Statistics.*