Germany and the Financial Crises 2007 – 2017

Martin Hellwig[1]

Preliminary draft, June 2018

Abstract

The paper tries to explain the paradox that, even though Germany was none of the epicenters of the financial crises of the past decade, these crises were very costly for German taxpayers. The explanation relates pre-crisis and crisis developments to the structure and history of the German financial system with its three "pillars" of private, public, and cooperative banks, with flaws in the system that did not matter as long as a weakness of competition left margins sufficiently high. Margins eroded in the 1990s. Guarantees for the public banks were outlawed in 2001, with implementation in 2005. The search for new business models was somewhat frantic, with problematic developments in (i) investments in subprime-related assets, (ii) capacity expansion and maturity transformation in the covered-bond sector, (iii) cross-border expansions in activities, lending and funding, and (iv) ship finance. The paper discusses poor governance, the macroeconomic environment following European Monetary Union, and politics as background factors. The paper also gives a brief overview over the crises and the political responses. Whereas a certain amount of downsizing has occurred, the basic symbiosis between the financial sector and the political system seems to have not much changed.

[1] Max Planck Institute for Research on Collective Goods, Bonn, and University of Bonn, hellwig@coll.mpg.de

Germany and the Financial Crises 2007 – 2017

1. Introduction

The German experience in the crisis decade since 2007 has been paradoxical. On the one hand, Germany was not one of the epicenters of the turbulence.[2] On the other hand, the fiscal costs of support to German financial institutions were very large, even in comparison to countries that were epicenters of crises.

Precise data on fiscal costs are not available, but by adding up numbers that have been publicly given for various institutions, one finds that total costs to taxpayers will probably exceed € 70 billion. The greater part of these costs involved the Landesbanken, wholesale banks owned by the different regional governments of the Federal Republic: WestLB € 18 billion,[3] HSH Nordbank € 16 billion,[4] SachsenLB at least € 1.5 billion,[5] Landesbank Baden-Württemberg (LBBW) € 5 billion, BayernLB € 10 billion.[6] In the private sector, the costs of government support for Hypo Real Estate (HRE) are guessed to be on the order of € 14 billion,[7] for Commerzbank (including Dresdner Bank) € 3 – 5 billion.[8] Industriekreditbank (IKB), which cost taxpayers € 9.6 billion,[9] was a hybrid, organized as a private-sector bank, but with a stake of 38 % held by Kreditanstalt für Wiederaufbau, wholly owned by the Federal Government.

The proximate causes of the losses are easily identified:

[2] The still ongoing crisis in shipping is an exception to this assessment. German banks fueled the boom that laid the ground for this crisis.
[3] According to the Finance Minister of the Nordrhein-Westfalen regional government on the occasion of the 2011 parliamentary decision to wind the bank down. The number refers to losses since 2005. The period 2000 – 2005 saw additional losses on the order of € 4 – 5 billion from bad investments in connection with the tech bubble and a costly attempt to set up a presence in London.
[4] Current discussion refers to taxpayer losses on the order of € 11 – 14 billion since 2009. An additional € 5 billion of losses were incurred in the years 2004 – 2009 and required a recapitalization in 2009.
[5] This amount has by now been taken out of the guarantee fund created by the Sachsen regional government. It is still possible that the full amount of the fund (€ 2.75 billion) might be needed. The equity position of the regional government that was wiped out is not included.
[6] For LBBW and BayernLB, see Kaserer (2010). The numbers given correspond to the amounts provided by public bodies to recapitalize the banks; they are approximately equal to the losses shown by the banks in the crisis years.
[7] See the calculations by Storn (2013, 2015).
[8] See Deutscher Bundestag (2017).
[9] Kaserer (2010).

- Losses on mortgage-related securities (MBS, CDOs) in the United States (WestLB, HSH Nordbank, SachsenLB, LBBW, BayernLB, IKB, Commerzbank/Dresdner Bank),
- Losses on Greek government debt (HRE),[10]
- Losses from covered-bond subsidiaries (WestImmo/WestLB, Eurohypo/Commerzbank),[11]
- Losses on shipping loans (HSH Nordbank, Commerzbank, Nord LB, Bremen LB),
- BayernLB's adventures with Austrian Hypo Group Alpe Adria (HGAA).

For a full assessment of developments, the following observations are also pertinent:

- US public support for AIG provided a significant benefit to Deutsche Bank.
- Government bailouts of senior unsecured creditors of Irish and Spanish banks in 2010 and 2012 provided significant benefits to German banks that had lent to these banks.
- Public support to Greece in May 2010 provided for continued Greek debt service to creditors until March 2012; more importantly, it gave German (and French) banks ample time to sell their holdings of Greek government debt before the haircut of March 2012, probably to Greek and Cypriot banks.

Without the indirect public support in these instances, bank losses – and probably also the need for direct support from German taxpayers – would have been even larger than they were.

At first sight, this is a bewildering list, with many different institutions affected by different risks that all came home, though some were forestalled by public support. However, the multiple developments were driven by a few common underlying forces, some inherent to the industry, some political, and some in the macroeconomic environment.

To get from the individual episodes to the underlying developments, I will pursue the following questions:

- Why was there so much cross-border lending and investment by German banks and why were German bankers so blind to the risks involved?
- Why was the covered-bond segment of the system so strongly affected by the crisis?
- Why were German financial institutions so heavily involved in lending to the shipping industry?

[10] See Storn (2013, 2015), Cas and Peresa (2016).

[11] The third major institution in covered-bond finance was HRE, which was nationalized in 2009 and partly reprivatized as Deutsche Pfandbriefbank (pbb) in 2015. A significant part of the HRE portfolio is still held in the government-owned FMS Wertmanagement, due to be slowly wound down until 2030.

- Why were losses in the Landesbanken so large? What was the role of the structure of the German financial system?
- Where were the supervisors while the risks were building up?
- What was the role of politics and government?

To address these questions, I will proceed as follows. In Section 2 below, I will first give a brief overview over the structure and the historical origins of the German financial system and then discuss developments in the 1990s that provide the background for the sequel. Subsequently, in Section 3, I give an overview over some distinct strands of developments that contributed to the buildup of risks in the decade preceding the crisis. In Section 4, I will consider the underlying causes of these developments, in the banking industry and in the political system. Section 5 will provide a brief overview over developments since 2007, beginning with the crisis of 2007 – 2009 and the political response to it and continuing with the various crises that followed. Section 6 will conclude with a brief summary assessment.

2. The German Financial System

2.1 The Structure of the System and its Origins[12]

The German financial system stands out for its separation into three so-called pillars, private banks, public banks, and cooperative banks. The term "private" here comprises joint-stock corporations as well as private banks in the Swiss sense of being privately held and managed by some of its owners. The term "public" refers to the bank's being owned by a municipal or regional government.[13]

When taken as a whole, the public banks are the most prominent part of the German financial system. They consist of the savings banks (Sparkassen) and the Landesbanken. The savings banks are owned by local governments, i.e. municipalities and districts. They go back to the 19th century when local authorities created them in order to provide the mass of the population with the means to maintain rainy-day funds, so that, if a person became sick or unemployed, the burden would not immediately fall on the municipality, which was in charge of welfare. During the 20th century, the savings banks developed into full-fledged retail banks, taking deposits, providing services to their depositors and lending to local firms as well as the municipalities owning them.

In contrast to the savings banks, the Landesbanken are latecomers. The Landesbanken are owned by the regional governments and regional associations of savings banks. They grew out of the giro centers that the savings banks had set up to organize the payment system for themselves and their customers. For a long time, the surplus funds that these giro centers obtained from the savings banks would be invested in the money market, usually by lending to the large private banks. Around 1970, the managers of these institutions moved to become active as bankers on their own. The regional governments approved this development because they liked the idea of having a para-fiscal facility to fund industrial policy outside parliamentary procedures.[14] The giro centers thus turned into the Landesbanken, involved in lending to medium and large firms, in competition with the large private banks, lending to

[12] For an extensive account of the German financial system, see Krahnen and Schmidt (2004).
[13] We neglect the federally owned and funded KfW, whose task it is to provide funding for federally privileged undertakings, usually as an add-on to funding by one of the "real" banks.
[14] The say of the other owners, the savings banks, in matters involving the Landesbanken, is constrained by the fact that the regional government can always change the law concerning savings banks.

governments, and in international project finance. In addition to funding by deposits from "their" savings banks, the Landesbanken obtain funding from wholesale markets.

The cooperative banks also go back to the 19th century. As the name indicates, they were created as cooperative ventures with mutual assistance (and monitoring) as a means of providing farmers and craftsmen with access to credit.[15] Like the system of public banks, their system involves a combination of local retail institutions and regional (by now national) institutions that grew from organizations managing intra-system payments to wholesale banks.[16]

Private banks for a long time were not much interested in retail banking. According to Tilly (1990), in the 19th century, they were organized as rich people's clubs, whose owners and managers used the information they had about the club members' liquidity needs and the influence they had over the club members' investment plans to coordinate lending and funding, also to provide investment banking and stock trading/brokerage services.[17] Whereas early in the century, these banks had been privately held, the 1870s saw the creation of several joint-stock banks such as Deutsche Bank. These large banks (Großbanken) quickly became the most visible financial institutions in Germany. Their role in the post-1870 industrialization and in pre-1914 stock markets gave rise to the notion of the main-bank relation (Hausbankbeziehung) as a basis for economic growth in a situation where internal sources of funds were insufficient and stock markets were not quite anonymous.[18] In the decade before 1914, they did come to appreciate the cheapness of deposits as a source of funding, without however reaching out to the mass of the population.[19]

The mere size of individual institutions such as Deutsche Bank or Dresdner Bank should not however divert attention away from the fact that in certain areas, these institutions were rather weak. They were important in funding medium and large firms, but at the retail level, they

[15] See, for example, Guinnane (2001).
[16] In this paper, we do not dwell on the cooperative banks. Their story over the past two decades is in many respects similar to that of the public lengths, with strength in retail and risk taking at the national institutions. In 2016, the two national institutions were merged into one as a way of dealing with the fallout from risks, without support from the government.
[17] Fohlin (2007).
[18] Gerschenkron (1962) famously used their example to support the proposition that economic development could be promoted by relying on institutions that did not match the English pattern. For a critical assessment, see Hellwig (1991).
[19] Riesser (1910).

were and are much less prominent than the public savings banks and the cooperative banks. In the 20th century, in particular, from the 1950s on, they did make an effort to move into retail banking for the population at large, but despite the cost they put into this effort, they did not succeed in displacing the savings banks and cooperative banks. In particular, their attempts to compete for mass deposits have been hampered by memories that in earlier times these banks used to turn their noses at common people. Even today, the image of being the banks of common people enables the savings banks to charge more for their services than other banks.

In contrast, the entry of the Landesbanken into the markets for lending to medium and large firms did not much affect the position of the large private banks in these markets. As newcomers in these markets, the Landesbanken had to cope with 'lemons' problems, acquiring the customers to whom the other banks had refused to lend.[20] Lending by the Landesbanken also was influenced by political interests of the regional governments that owned them; thus they engaged in funding politically well-connected real estate developments, [21] in providing loans to fund ships,[22] and in promoting industrial policy through loans and equity holdings.[23]

The large private banks were never much interested in lending to small firms at the retail level. As a matter of principle and as a way of saving on the costs of creditworthiness assessments, they required borrowers to put up significant collateral. Thus they were not available for, e.g., the craftsman who wanted to set up his own shop, with only a master's certificate and no wealth of his own. Such retail customers would borrow from the local savings bank or local cooperative bank, which knew that creditworthiness of the craftsman was almost guaranteed by the fact that, with entry severely restricted by the requirement of a

[20] A typical example would be WestLB's relation to Beton- und Monierbau, a large construction company, which ended going bankrupt in 1979, six months after WestLB had managed a public offering of new shares, with a prospectus affirming the soundness of the corporation.
[21] In the mid-1970s, such a venture endangered the solvency of Hessische Landesbank (Helaba), which had to be recapitalized by its owners. In the late 1990s and early 2000s, Berliner Bankgesellschaft repeated the experience, with a cost to taxpayers of at least € 2 billion.
[22] In particular, Hamburgische Landesbank, which in 2004 was merged into HSH Nordbank. Lending to fund ships was (and is) deemed to be good for promoting the activities of the port of Hamburg.
[23] WestLB was particularly active here. An interesting episode occured in the spring of 1998 when WestLB wanted to sell its holding of steel producer Preussag Stahl perhaps with a view to damaging the reelection prospects of Gerhard Schröder, then head of the government in Niedersachsen. Schröder preempted a sale to Austrian Voestalpine by having NordLB, his own Landesbank, acquire the position. The energetic leadership that he displayed in this episode contributed to his dramatic victories first in the regional election in Niedersachsen and then, later in the year, in the federal election.

master's certificate, possession of such a certificate was almost the equivalent of a license to print money.

The large private banks did play a special role in securities trading. For decades, their retail clientele would account for a large part of the demand for brokerage and portfolio advisory and management services and, as universal banks, they would handle this demand, sometimes with elements of front-running or dual-capacity trading. They were also prominent in the governance of the stock exchanges. In the period since World War II, they used the control they had over the admission of new listings as a means of protecting their lending business, imposing restrictions that went significantly beyond statutory requirements.[24] Throughout this period, the stock market capitalization of German corporations relative to GDP has therefore been much lower than in the Anglo-Saxon countries.[25] [26]

2.2 The Evolution of Competition and Profitability in the 1990s

Market Structure and Segmentation

Outside observers, such as the International Monetary Fund, have often considered the German financial sector to be competitive, unprofitable, and inefficient.[27] Such an assessment may well be justified, but the arguments that are given are often not helpful.

For example, a 2004 assessment by the International Monetary Fund noted that standard concentration ratios are very low and concluded that banking in Germany is not the kind of narrow oligopoly that we have in the Netherlands or the United Kingdom. These ratios however are not very meaningful because they do not take account of market segmentation.

---

[24] Wissenschaftlicher Beirat (1997).

[25] See, e.g., Prowse (1994), Franks and Mayer (1995), Rajan and Zingales (2003). Relying on 1985 data from the IMF, Prowse finds that the ratio of stock market capitalization to GDP is 29% in Germany, compared to 51% in the United States and 90 % in the United Kingdom, but then he goes on to argue that the number is biased because it does not account for cross-holdings, which he estimates at 52% of German stock values. When netting out the cross-holdings, he finds a ratio of 14% for Germany, which compares to 48% in the United States and 81% in the United Kingdom. Relying on publicly available data for 1994, Wenger (1996) gives 27% as a lower bound on cross-holdings, but argues that recognizable inconsistencies in published numbers indicate that the correct number must be much higher, perhaps as high as Prowse's 52%. For a stylized representation of cross-holdings see my comment on Franks and Mayer (1995).

[26] Rajan and Zingales (2003) emphasize that stock markets were much more active before 1914. On this point, see also Fohlin (2007), who argues that, before 1914, banks' management of stock markets played a major role in bank-firm relations.

[27] Thus Brunner et al. (2004).

Nor do they take account of agreements limiting intra-sector competition, in the system of public banks and in the system of cooperative banks. These agreements impose geographic limits on the activities of the retail institutions and prevent the wholesale institutions from competing in retail, in particular for customer deposits.

Thus, standard concentration ratios miss the fact that retail banking is dominated by the local savings banks and cooperative banks. In relation to national aggregates, each of these institutions is small, but it may well be dominant in its own local markets. If we were to treat the group of public banks as a single entity, we would find, with market shares between thirty and forty percent, they are close to being collectively dominant in credit markets. This assessment however would also be misleading because it fails to take account of market segmentation. While savings banks and cooperative banks have very strong positions in retail markets, for deposits and customer services as well as lending to private households and to small firms, they are not much present in wholesale markets and securities markets and related activities. Initial public offerings, for example, rare as they were, have for a long time been the domain of the large private banks, with Deutsche Bank forever serving as the lead underwriter.[28]

The Erosion of Margins in the 1990s

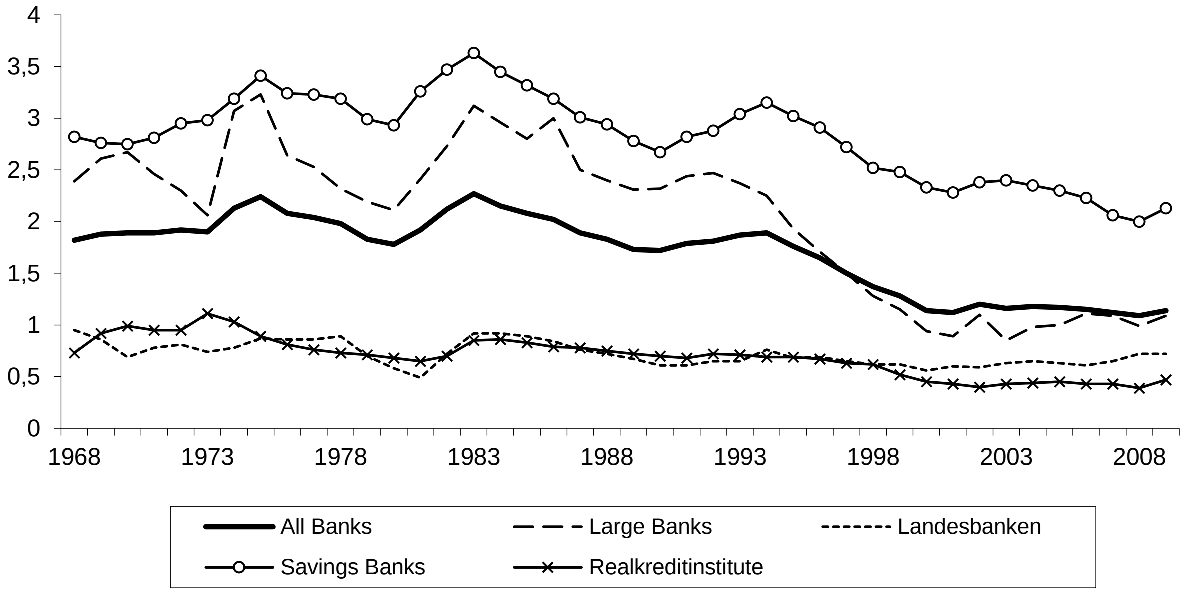
In assessing the competitiveness and the performance of the industry, we therefore prefer to look at indicators of profitability. Figure 1 gives an overview over the evolution of interest margins of the different groups between 1968 and 2008. In addition to the savings banks, the large private banks and the Landesbanken, the figure also show margins obtained by a further group, which we have not yet discussed, specialized banks that provide mortgages for real-estate investments and that fund themselves by issuing covered bonds.

The figure provides two insights. First, there is a clear ranking of interest margins obtained by the different groups in the industry. Second, beginning in the mid-1980s and accelerating in the 1990s, there has been a downward trend in these margins.

---

[28] Wasserfallen and Wittleder (1994).

Figure 1: Interest earned minus interest paid in percent of total assets



Source: Expertenrat 2011 (Deutsche Bundesbank, Die Ertragslage der deutschen Kreditinstitute, September 2010)

The savings banks have consistently been the most profitable part of the financial system. This profitability reflects the strong, perhaps even dominant, positions they have in retail markets. By contrast, the Landesbanken and the real-estate banks have consistently been the least profitable part of the financial system.

The low interest margins of the real-estate banks probably reflect the high degree of competition, enabled by low-risk nature and the homogeneity of their business. Low operating costs per euro invested may also play a role.

The low interest margins of the Landesbanken, however, are rather striking because these margins have consistently benefited from guarantees provided by the regional governments, the owners. These guarantees enabled a Landesbank that might have a B- or C rating when assessed on its own to borrow at the low rates corresponding to the AAA or AA ratings of the regional governments. Given their lower borrowing costs, the low margins shown in Figure 1 suggest that their loans and other investments earned significantly lower returns in comparison to other banks. Such low returns are likely to reflect a low profitability in lending either because of political influence or because of poor borrower selection.

The interest margins of the large private banks initially were slightly lower than those of the savings banks but in the 1990s, the difference became larger so that, by 2000, their margins were barely above those of the Landesbanken. The decline of interest margins since the mid-1980s has affected all banking groups, but the effect has been the most dramatic for the large private banks. The savings banks were also affected, but managed to maintain their margins significantly above the average; the Landesbanken were close to the bottom anyway.

The erosion of interest margins suggests that over this period, competition became more intense. Two developments seem relevant. First, as discussed by Edwards and Fischer (1994), based on evidence from the late 1980s, the main-bank relation that had traditionally tied German firms to "their" main bank (Hausbank) lost its importance as nonfinancial firms gained access to organized markets, in particular markets for euro-notes and bonds, and as the banks tried to compensate for the effects of this emancipation by intensifying the competition for medium enterprises that were just below the thresholds for admission to such markets. Second, as discussed by Fischer and Pfeil (2004), the admission of money market mutual funds in 1994 seems to have intensified competition for deposits.[29]

These developments seem to mirror developments in other countries, beginning with the United States in the mid-1970s. In the decades before 1970, banks in most countries had been able to earn large margins, supported by deposit rate regulation and/or statutory barriers to competition. A mixture of institutional innovations (money market mutual funds), technical innovations (information processing and communication systems), and deregulation had eroded the margins.[30]

German banks had traditionally been less heavily regulated than banks in other countries. Apart from minimum reserve requirements and large-exposure rules, there were no asset allocation rules, and there was no statutory regulation of interest rates on bank liabilities.[31] However, banks had a long tradition of *not* competing on deposit rates. In the past, there had

---

[29] Fischer and Pfeil (2004) document a significant decline in bank deposit margins in 1995, just as money market mutual funds were introduced. Using an event study of abnormal returns around the announcement date for the admission of money market mutual funds, they also find a significant negative effect on banks' market values, -1.2% for a portfolio of small banks, -3.6% for a portfolio of large banks.

[30] For overviews over these developments, see Hellwig (1995), Admati and Hellwig (2013, Ch. 4). Baltensperger and Dermine (1987) and OECD (1992) provide comprehensive coverage of deregulation in different countries.

[31] There were restrictions on entry, however; financial institutions needed licenses, which in the case of money market mutual funds came much later than in other countries. There also were severe restrictions on financial activities of insurance companies, which reduced competition from that sector.

been an explicit cartel for deposit rates. That was ended in 1968, but the end of the explicit cartel did not bring about much price competition. One suspects that implicit cartelization may have persisted but perhaps the segmentation of clienteles, combined with large consumer switching costs, was all the industry needed to prevent price competition and maintain high margins – until the admission of money market mutual funds in the 1990s.

The high costs of German banks that have been noted by outside observers may be a reflection of the lack of price competition. With high margins and a reluctance to compete on deposit rates, German banks tried to compete on quality, in particular, location. The density of the networks of bank branches has been exceptionally and continues to be so, despite some consolidation and some closures of branches.

Why was there no Crisis in the Early 1990s?

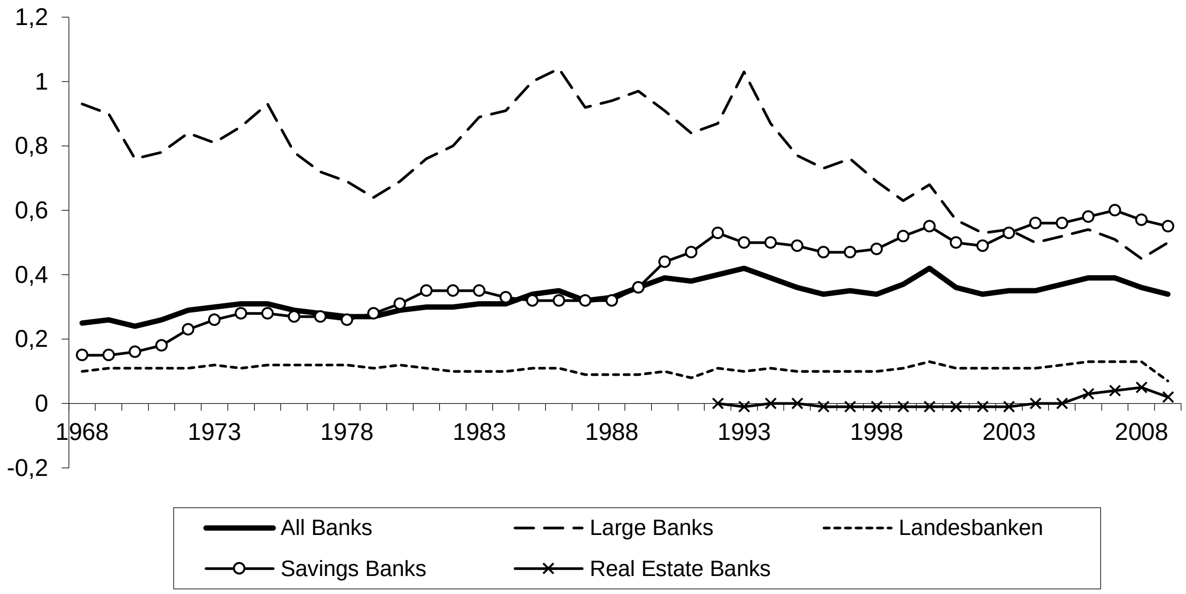
German banks seem to have been slow to recognize the fundamental importance of these developments. They took a long time to begin adjusting their operating costs; the result was the so-called "banking crisis" of 2002/03, with stock price declines that seemed dramatic at the time and with operating losses due to loan write-downs and high operating costs. I suspect that these losses were not merely due to the burst of the tech bubble and the recession it induced. They may also have been a delayed recognition of a crisis in the early 1990s that was never acknowledged.

Whereas in the early 1990s, most OECD countries experienced problems, or even outright crises in their banking sectors, due to poor decisions in the preceding boom of lending for real estate investments and small and medium enterprises, Germany, the country of the post-unification boom, which also was followed by a bust, did not have such a crisis. To some extent, banks neutralized losses by realizing hidden reserves. When the hidden reserves were exhausted, they began to carry negative hidden reserves, presumably hoping to dissolve these negative hidden reserves once the upswing after the current recession would restore profits. However, when it came, in 1999, the upswing was short and did not substantially raise profits again.[32]

[32] An infamous example was Bayerische Hypotheken- und Wechselbank (BayernHyp), a private bank with large blocks held by the insurance company Allianz and by the Free State of Bavaria. BayernHyp had been very active in real-estate lending in eastern Germany and for a time carried large hidden losses. In 1998, the bank was merged into Bayerische Vereinsbank to form HypoVereinsbank (HVB) through an exchange of shares at an

In summary, as Germany entered the new century, important parts of her banking system were under siege. For the Landesbanken, this was nothing new. There always had been doubts about their business models, except as para-fiscal institutions for their regional governments. What was new was the threat to the large private banks, partly from hidden losses of the early 1990s, more importantly from the intensification of competition and the erosion of margins. The only part of the system that continued to be reliably profitably was the retail business of the local savings and cooperative banks.

Figure 2: Fees for services earned minus costs in percent of total assets



Source: Expertenrat 2011 (Deutsche Bundesbank, Die Ertragslage der deutschen Kreditinstitute, September 2010)

To complete this survey of the background to pre-crisis developments, we note that, if we look at revenues from fees for services rather than interest margins, the picture does not change. Figure 2 shows the excess of fee income over costs, again as a percentage of total assets. For the large private banks, this source of profits was always much higher than for the other banks; the difference reflects their strength in investment banking and portfolio

exchange ratio suited to the interests of the two blockholders. Only a few months after the merger, the books of BayernHyp for 1997 were rewritten to acknowledge losses from bad loans in the post-unification boom!

management and advisory services. However, in this area, their margins also declined significantly in the 1990s.[33]

I suspect that this development also reflects the effects of more intense competition, in dealing with corporate clients and in dealing with investors. The advent of the internet made it cost-effective for specialized brokerage firms to address retail investors directly, on a large scale. Figure 2 also reflects the fact that, during this period, the savings banks expanded into portfolio management and advisory services, selling bonds of the Landesbanken or Lehman certificates to customers looking for investments beyond traditional saving plans.

The 1997 creation of the "Neuer Markt", a sort of alternative investment market for corporations that did not meet the stringent requirements imposed for listings on the traditional stock exchange, does not contradict this assessment. From the German banks' perspective, this innovation was not so much a matter of taking advantage of the hype about new technology[34] as it was a defensive measure against the threat that new companies might disappear from their horizon altogether, getting listings on NASDAQ or on the Israeli stock exchange, as had already happened in a few cases. Competition from other countries thus undermined their strategy of keeping firms off the stock exchange in order to protect their lending business.

Orders of Magnitude

Before we start our account of developments leading into the crisis, we give a few numbers to provide a sense of orders of magnitude. The numbers are taken from the Bundesbank's statistics for the different groups for December 31, 2008. The order of magnitude was much the same in the years before the crisis.

---

[33] The decline is the more notable since this is the period when the large private banks developed assistance to tax evasion as a major line of business, providing customers with accounts at subsidiaries in Luxembourg or selling them shares in Luxembourg-listed investment funds and charging a significant part of presumed tax savings as fees.

[34] At the time, some observers suggested that the initial success of Neuer Markt was due to its listing requirements being more stringent and investor protection more effective than on the regular stock exchange; see, e.g., Johnson (2002). This suggestion overlooks the fact that the requirements that banks actually imposed for IPOs on the regular stock exchange were much more stringent than what was written in the law and various regulations – and more stringent than the requirements for the Neuer Markt. Subsequent events showed that investor protection on the Neuer Markt was in fact remarkably weak.

According to the Bundesbank's statistics, banks in Germany had total assets of just below € 8 trillion, 3.2 times GDP, at the end of 2008.[35] Total equity was 331 billion, around 4.1 % of total assets. Of the total assets, € 2.5 trillion was held by private banks, € 2.6 trillion by public banks, € 0.9 trillion be cooperative banks, and € 0.8 trillion by real-estate banks.[36] Among the private banks, the 5 large banks held € 1.5 trillion, the 164 regional banks € 0.8 trillion, and 104 branches of foreign banks € 0.2 trillion; among the public banks, the 11 Landesbanken held € 1.6 trillion and the 438 savings banks € 1.1 trillion; among the cooperative banks, 2 national institutions held € 0.2 trillion and 1197 local banks € 0.7 trillion.

Total loans to domestic nonbanks at this time amounted to € 3.2 trillion, of which € 886 billion came from private banks, € 1180 billion from public banks, € 414 billion from cooperative banks, and € 391 billion from real-estate banks. Loans from the large private banks amounted to € 437 billion, from the Landesbanken to € 549 billion (€ 631 billion from the local savings banks!).

Funding at this time involved € 2.3 trillion in liabilities to banks, € 3 trillion in liabilities to nonbanks, almost all in the form of demand, term and savings deposits, € 1.6 trillion in debt securities. Among the liabilities to nonbanks were € 550 billion in liabilities of the large banks, € 408 billion in liabilities of the Landesbanken, € 699 billion in liabilities of the savings banks, € 459 billion in liabilities of the cooperative banks, and € 183 billion on liabilities of the real estate banks; the latter however had issued debt securities, mainly covered bonds, for € 392 billion.

The following account will focus on the large private banks, the Landesbanken and the real-estate banks (or more generally the issuers of covered bonds). These institutions were particularly affected by the crisis and some of the most important among them ended up needing government support. In contrast, the local savings and cooperative banks were not much affected, except through their involvement with the large institutions in their sectors. In the case of the cooperative banks, adverse developments at the large institutions were sufficiently contained so that taxpayer support was not needed.

[35] In this number, the assets of foreign subsidiaries are not consolidated.
[36] The remaining amounts were held by banks with special tasks and by home-ownership savings banks.

3. Critical Pre-Crisis Developments

In this section, I consider the various developments that caused German banks to be strongly affected by the financial crises of 2008 and beyond. In contrast to the preceding broad-brush discussion of developments in the 1990s, the following discussion of pre-crisis developments will focus on specific institutions and specific activities that turned out to be crucial in the crisis. The account given is selective. In particular, I do not cover activities and losses related to the technology bubble in the late 1990s and its burst in the early 2000s.

At first sight, the account will appear as a shopping list of seemingly unrelated items. Because of the fragmented nature of the German financial system and because of the heterogeneity of crisis developments identified in the introduction, such an appearance is unavoidable. In the next section, however, I will argue that the seemingly unrelated developments may in fact be attributed to several common underlying causes in the competitive, political and macroeconomic environments.

3.1 Landesbanken, Special Purpose Vehicles, and "Toxic" Investments

A key event was the agreement in 2001 between the European Commission and the German government to phase out the public guarantees for public banks. As mentioned above, the German public banks, Landesbanken and local savings banks, had previously benefited from guarantees that the owners of these institutions, i.e. the German Länder and the municipalities, had given to the institutions' creditors. These guarantees had enabled the Landesbanken to borrow in international markets at interest rates reflecting the credit ratings of the owners rather than the banks themselves. Following complaints by the Association of German Banks, the private banks' organization, the European Commission decided that these guarantees constituted state aid of a kind that was incompatible with the competition rules of the European Common Market.[37] After the German government threatened to contest this decision in court,[38] a negotiation between representatives of the Commission and the German

[37] The first complaint by the Association of German Banks had been raised in 1993, against the practice of transferring government-owned real-estate development corporations to the Landesbanken in order to meet capital requirements under the first Basel Accord. This complaint was subsequently extended to cover the guarantees.

[38] Court proceedings concerning the earlier issue, mentioned in the preceding note, on whether transfers of government-owned property to WestLB constituted illegal state aid, were still going on at the time. The last court judgment in the matter only came in 2003.

Federal and Länder governments[39] led to an accord whereby the Commission's decision was allowed to stand, with a proviso that it would only take effect in 2005.

In the intervening years, the Landesbanken were able to issue new debt at privileged rates with government guarantees. Knowing that the privilege would come to an end, they did so on a large scale, raising some € 250 billion altogether from mid-2001 to mid-2005. The amounts raised in those four years were vastly greater than previous borrowing by these institutions; ranging from a multiple of 7.3 times the borrowing in mid-1999 to mid-2001 for NordLB to a multiple of 15.8 times the borrowing in mid-1999 to mid-2001 for SachsenLB.[40]

In principle, an end to government guarantees affects banks through a reduction in charter value and through an increase in potential market discipline. The delay in implementation implied a delay in the market discipline effect. By contrast, the reduction in charter value occurred immediately, although it was somewhat mitigated by the additional guaranteed borrowing during the transition period.

Econometric work by Fischer et al. (2014) suggests that the charter value effect induced the Landesbanken to make riskier loans. For the period before 2001, these authors do not find any significant difference between the riskiness of loans from the Landesbanken and the riskiness of loans from comparable banks that did not benefit from guarantees, but after 2001, a pronounced difference seems to have arisen. Moreover, the effect was the stronger the weaker the Landesbank in question was in terms of its stand-alone credit ratings. Körner and Schnabel (2013) observe a similar effect for the German savings banks relative to comparable cooperative banks. In their analysis, the charter value effect appears indirectly, through its effects on the Landesbanken with which the savings banks were associated as members of their regional associations, which held equity stakes in the Landesbanken. By contrast, the direct effects of the savings banks' themselves no longer benefiting from public guarantees seem to have been small as most of their funding came from deposits much below the limits of guarantees under statutory requirements for deposit insurance schemes.

[39] It is of interest to note that one of the chief negotiators on the German side was Peer Steinbrück, then Finance Minister of Nordrhein-Westfalen, responsible for WestLB, and subsequently, in 2005-09, Federal Finance Minister, in place when the financial crisis struck.

[40] See Fischer et al. (2014). Actually, borrowing in the reference period mid-1999 to mid-2001 is already affected by the Commission's proceedings. Whereas, before 2001, total new borrowing by the Landesbanken was on the order of € 10 billion or less for the entire year, their borrowing in just the first half of 2001 amounted to more than € 15 billion, presumably a reflection of fears that the guarantees might come to an end immediately.

Additional risk taking by the Landesbanken also took the form of investments in mortgage-related securities (MBS and ABS CDOs) in the United States, usually through structured investment vehicles (SIVs) funded by issuing short-term asset-backed commercial paper, with liquidity guarantees from the sponsoring banks. According to Acharya and Schnabl (2010) and Fischer et al. (2014), the Landesbanken contributed substantially to the demand for mortgage-backed securities and CDOs and to the demand for funding by asset-backed commercial paper (ABCP). Already by the end of 2006, their aggregate exposure through off-balance sheet vehicles amounted to € 97 billion, with outliers at WestLB (€ 34 billion, almost 12 % of on-balance sheet total assets) and SachsenLB (€ 25 billion, over 37 % of on-balance sheet total assets). Whereas total volume of ABCP grew from $ 494 billion in 2000 to $ 1000 billion in 2006, Landesbanken borrowing in this market grew from $ 30 billion in 2000 to $ 84 billion in 2006; even as the market itself doubled in size, their share in it grew from 6 % to over 8 %.

The large exposures in mortgage-related securities explain why the Landesbanken were particularly hard hit by the subprime crisis. In August 2007, SachsenLB was one of the first institutions to be hit when ABCP markets for funding SIVs froze. To meet the liquidity guarantees it had given, it had to get a large loan from the regional savings banks, but then it fell afoul of equity requirements when it had to take its SIV positions into its own books. Since the owners were unable to put up sufficient additional equity, the bank was taken over by another Landesbank, LBBW, which immediately provided € 300 million in additional equity. At the time, the participants claimed that Sachsen LB was solvent, but developments since then have forced LBBW to claim over € 1.5 billion from the Sachsen government's guarantee fund. Even before the crisis of Sachsen LB, WestLB had announced losses of some € 355 million, to be followed a year later by the creation of a "bad bank" for some € 23 billion of "toxic" assets.

The traditional notion that a loss of charter value induces excessive risk taking is probably too euphemistic – for two reasons. First, this notion presumes that there was a charter value to be lost. In fact, the account given in the preceding section suggests that, even with the guarantees, the Landesbanken were unable to earn decent returns and may never have had much charter value to begin with. The increase in funding costs that was implied by the end of the guarantees in fact threatened their very survival. “Gambling for survival” and “yield panic” are perhaps more apt descriptions of what was going on.[41]

Second, the assessment assumes that they understood what they were doing. There is some anecdotal evidence suggesting that in fact they did not do so. When Lewis (2010) refers to subprime-mortgage-related securities being bought by “stupid bankers in Düsseldorf”, the reference is to WestLB and Industriekreditbank (IKB), both of which were domiciled in Düsseldorf. Dunbar (2011) mentions an early episode involving a sale of asset-backed securities to Schleswig-Holsteinische Landesbank (later merged into HSH Nordbank), where the buyers neither knew nor cared for the composition of the portfolio backing the securities they purchased, which in fact had a significant portion of trash. Lack of competence may have been a consequence of poor governance in institutions where supervisory boards were staffed by politicians and personalities from public life. It may also have been a consequence of an inability to attract the ablest people in an environment in which financial competence came at a very high price.[42]

The Landesbanken were not the only German banks to fall for mortgage-related securities. Dresdner Bank, one of the large private banks, and IKB, in principle a private bank, but under the control of federally-owned Kreditanstalt für Wiederaufbau (KfW), also bought large amounts of MBS and CDOs and held them through SIVs.[43] In the case of IKB, governance seems to have been as poor as with the Landesbanken. Traditionally specialized in lending to medium-sized companies, IKB wanted to go for higher returns and disregarded the risks.

3.2 The Covered-Bond Sector

Another part of the German financial system that would be hard hit by the crisis was the covered bond sector. Covered bond finance in Germany has a long tradition, going back to the 18th century. Traditionally, it was handled by specialized institutions with a license to issue covered bonds (“Pfandbriefe”), i.e. long-term bonds that were protected by collateral.

---

[41] The term “yield panic” was used in Hellwig (2009). A former board member of Nord LB, a Landesbank that did *not* go into “toxic” securities, commented that this term was apt to characterize their discussions during these years.

[42] At one point in 2010, I was told by an international investment banker that, among investment bankers, the representatives of the Landesbanken used to be called “stuffies” – because you could always stuff them with things you wanted to sell.

[43] Internationally, IKB has become known as one of the counterparties to the infamous ABACUS deal that Goldman Sachs engineered for hedge fund manager John Paulson.

Different kinds of covered bonds were distinguished according to the kind of collateral involved, public debt securities, real-estate mortgages, or ship mortgages. (By now there also are mortgages on airplanes.) The collateral would be listed in official registries, monitored by trustees appointed by the supervisory authority. The trustee would call on the bank to refill the collateral if it was depleted, through prepayments by the borrowers or through losses. In contrast to asset-backed securities in the United States, the issuing bank would be fully liable for its debt, i.e. liability is not limited to the amount of the collateral.

In 2005, a new law on covered bonds ("Pfandbriefgesetz") unified the different legal provisions for covered bonds involving public debt, real-estate mortgages and ship mortgages. The new law also liberalized entry into this sector. Whereas in the past, covered bond issues had been limited to specialized institutions, the 2005 law created the possibility that any licensed bank could simply ask BaFin, the supervisory authority, for a license to enter the covered bond segment of the financial system. This liberalization, which was extensively used by Landesbanken that had not previously created covered-bond subsidiaries, intensified competition in the covered bond segment of the financial system. As indicated by the graph for real-estate banks in Figure 1, this had always been a low-margin business, but now the intensification of price competition forced some banks to engage in what may again be called gambling for survival.

To understand the mechanism, it is important to appreciate that covered bond issues accounted only for a part of the funding needs in this segment, on the order of 70 %. There are two reasons for the discrepancy. First, the nominal value of the collateral must exceed the nominal value of the covered bonds. The legally mandated excess is only two percent, but to reduce administrative costs in handling fluctuations over time, actual excess coverage was usually much higher. Second, the law imposes limits on the relation of mortgage values to property values, e.g. for real-estate mortgages a limit of 60%. Depending on how much equity the borrower might have, such limits might necessitate additional funding, e.g. through a second mortgage that would not be eligible as collateral for a covered bond.

In the run-up to the financial crisis, the additional funding that was needed involved very significant maturity transformation. Maturity transformation on the additional funding was a way to keep recognized funding costs down (without accounting for the risks attached) and thus to "survive" in the intense price competition that was characteristic for the sector and that had been strengthened even more by the 2005 liberalization.[44] In this development, participants without much of a deposit base, such as Hypo Real Estate, Aareal Bank, or the Franco-Belgian bank Dexia, went to wholesale markets, borrowing short-term in the money market to fund long-term bonds and mortgages. In contrast, Commerzbank with Eurohypo as a covered-bond subsidiary, had significant funding from customer deposits; the Landesbanken, in particular, WestLB, with West Immo as a covered-bond subsidiary, relied on deposits from the regional savings banks

The resulting funding risk for HRE came home when money markets froze in September 2008. Hypo Real Estate (HRE), with total assets exceeding € 400 billion, was unable to roll over the short-term funding of its Irish subsidiary Depfa, initially said to amount to € 35 billion. This liquidity shortfall triggered the Federal Government's interventions in support of the financial sector. Mr. Ackermann, the CEO of Deutsche Bank, convinced the Federal Chancellor that a default of Depfa or of its parent HRE would have dramatic consequences. The government at first tried to get the industry to share in the burden of the intervention, but even as these negotiations were going on, estimates of HRE immediate funding needs were revised upward to well over € 50 billion and it became clear that a protracted negotiation carried risks of matters getting worse yet. In a rushed procedure in the second week of October 2008, therefore, a law empowering the Federal Government to provide up to € 400 billion in loan guarantees and up to € 80 billion in equity funding was passed in an expedited procedure. Using this law, the Federal Government immediately provided HRE with loan guarantees for up to € 145 billion (of which € 124 billion were eventually used). It also provided HRE with equity, eventually acquiring all of the bank's outstanding shares.

At the time, the government's support for HRE was referred to as liquidity support. The extent to which there also was a solvency problem is unclear. By year end 2008, HRE did report negative equity. Moreover, as mentioned in the introduction, the government did end up with large losses from HRE. However, the losses that caused the bank's equity to become negative in 2008 are only indirectly related to the losses that ended up hitting the government. The 2008 accounts list operating losses of close to € 5.5 billion, mainly from write-downs on the 2007 acquisition of Dublin-based bank Depfa and on mortgage-backed securities, collateralized debt obligations and the like, and a reduction of revaluation reserves by € 2.4

[44] The share of deposits in the funding of real-estate banks went from 16 % of total assets in 2004 to 25 % in 2008, i.e. from roughly one half to five sixth of funding needs in excess of covered bond issues.

billion, due to increases in spreads for debt securities of multiple borrowers. The losses that the government ended up with were mainly due to the 2012 write-down on Greek government debt. [45] One might argue that the latter event was already foreshadowed by the 2008 increase in spreads, but then the increase in spreads affected debt securities of all issuers, and there was a sense that this was a temporary occurrence. However, even if the losses were deemed to be temporary, it should be noted that the bank's equity, amounting to less than 2% of total assets, had been insufficient to absorb them.

In the case of Aareal Bank, another bank specializing in real-estate lending funded by covered bonds, it seems clear that there never was any solvency problem but the dependence on wholesale funding made the bank vulnerable to the market turbulences of the post-Lehman months. In 2008, Aareal Bank showed an operating profit despite the crisis, and even after a significant reduction of revaluation reserves, its equity amounted to 4% of total assets, i.e., its solvency was never in doubt. Nevertheless, in the spring of 2009, the bank's management was afraid that market mistrust of the bank's business model might endanger the wholesale funding on which the bank depended. Therefore it also applied for an equity injection and for loan guarantees from the Federal Government. The loan guarantees lapsed after three years, the equity was paid back in full by 2014. [46]

Commerzbank, with covered-bond subsidiary Eurohypo, provides yet another perspective on the issue.[47] With total assets close to € 300 billion in 2008, Eurohypo accounted for almost one half of Commerzbank's overall balance sheet of € 625 billion. Moreover, Eurohypo did contribute substantially to Commerzbank's total loss of roughly € 4.5 billion in 2008.[48]

---

[45] Exactly the same issues arise with the Franco-Belgian bank Dexia, whose strategy and fate were in many ways very similar to those of HRE.

[46] With total assets of € 42 billion, Aareal Bank was only one tenth the size of HRE. The government's equity position was € 525 million, the approved loan guarantees were for € 4 billion, of which € 2 billion was actually used.

[47] For the fourth member of this group, WestLB, with total assets amounting to € 288 billion in 2008 and with real-estate subsidiary West Immo having € 26 billion in total assets, the story is similar, though on a much smaller scale. WestLB needed support because of losses on structured investments in the United States, held through SIVs. West Immo did not play a role then, but has been a source of losses in the winding down of the institution.

[48] Eurohypo reported an operating loss of € 1.2 billion. Because of Commerzbank's profits in its own lending, the institution's overall operating loss was only € 400 million, which was fully balanced by tax savings. The roughly € 4.5 billion hit to the institution's equity involved in particular a € 3.2 billion charge to revaluation reserves and a € 0.9 billion charge to cash flow hedge valuations. I suspect that the charge to revaluation reserves also was largely attributable to Eurohypo, in particular through valuation adjustments on their holdings of public debt. The bank's report lists write downs on asset-backed securities and the like, losses in the Lehman insolvency, losses in Icelandic banks, and write-downs on public debt due to the post-Lehman increase in spreads as the main drivers of the losses.

However, with a stable deposit base, the bank did not have an immediate liquidity problem. The need for government support was due to the agreement, concluded on August 31, 2008 (!), to buy a major part of Dresdner Bank AG, with total assets of € 320 billion,[49] from the insurance company Allianz, for € 3 billion in cash and an 18 % share in Commerzbank. Given that the 2008 losses had reduced Commerzbank's own equity to € 11 billion, the merger, which was to take place in 2009, was seen to create a severe equity shortage for Commerzbank, which the Federal Government stepped in to remedy.

However, although Eurohypo was not the cause of the need for government support in 2008/09, it was a significant drain on Commerzbank's resources until 2016, when it was wound down. Recurrent large write-downs and provisions suggest that gambling for survival in the run-up to the crisis was not just a matter of maturity transformation but perhaps also a matter of incurring significant risks in lending.[50]

3.3 Internationalization

The two decades before the crisis saw significant increases in international activities of the larger German banks. The following developments are noteworthy.

Cross-border real-estate and public-sector finance with covered-bond funding

Institutions like HRE, Eurohypo, or West Immo wanted to turn the business of real-estate and public-sector finance with German-law covered-bond funding into an export product. In the years before 2008, they established facilities to engage in real-estate lending, in particular commercial real-estate lending, in all major European countries. Markets that had previously been the turf of one or two national champions suddenly saw the addition of two or three large other market participants.[51]

---

[49] This is the number given for December 31, 2008 in the report published by Commerzbank for the part of Dresdner they took over. In that report, the number for December 31, 2007 is € 434 billion. In the actual report for 2007, total assets of Dresdner Bank were still € 500 billion.
[50] Unfortunately, the bank's reports on the performance of "non core assets" commingle public sector lending, commercial real estate in various countries, and shipping (Deutsche Schiffsbank), so that it is not possible to disentangle where things went wrong.
[51] As a member of the Federal Government's expert committee for developing strategies to exit the government's crisis-induced participations in banks, I was struck to see that, in presentations by Commerzbank, HRE, and WestLB on future strategies of their institutions, all three discussed their covered-bond business strategies in terms of competition in each national market in Europe as a matter of competing against the other two and against one or two national champions in that market.

From a post-crisis perspective, large engagements in the US, Spain and Ireland are particularly noteworthy. Public-sector finance demanded less of a presence in place, but here, too, cross-border activities grew, e.g., through investments in public debt of southern European countries. The exposures of German (and French) banks to southern European public debt ended up playing a role in the handling of the Greek debt crisis in 2010.

Cross-border interbank lending and funding

In the global financial system, wholesale markets, in particular interbank markets grew a lot in the years before 2008. The larger German banks participated in this development, which often meant going across jurisdictional borders. As of September 2008, there were significant exposures to (some) US institutions, to Icelandic banks, Greek banks, Irish banks and Spanish banks. Some of Commerzbank's losses in 2008 were directly caused by the defaults of Lehman Brothers, Washington Mutual, and the Icelandic banks.

Dollar exposures were mostly funded in dollars, through wholesale markets. While neutralizing exchange rate risks, this funding policy made German banks (and French banks, which used similar strategies) vulnerable to the vagaries of money markets. This vulnerability played a role in the post-Lehman crisis, when money markets froze, and again in the crisis of 2011, when the announcement of the haircut on Greek debt and the European Banking Authority's publication of exposures to Greek debt induced US money market institutions to reduce their funding to European banks.

Exposures to Irish, Spanish, and Greek banks might have caused even larger losses. However, the exposures to Irish banks were bailed out by the Irish government;[52] similarly, the exposures to Spanish banks benefited from the 2012 bailout by the Spanish government. As for the Greek exposures, when money markets froze in the fall of 2008, German banks, like other banks drastically reduced their lending to Greek banks. This was made possible by the European Central Bank's use of unconventional monetary policy (e.g. reduced quality

[52] The initial guarantee provided by the Irish government in 2008 lapsed in the fall of 2010. When subsequently the Irish government wanted to bail in the senior unsecured creditors of Irish banks, a letter from the President of the European Central Bank threatened a discontinuation of the ECB's approval for emergency liquidity assistance for Irish banks, upon which the Irish government desisted from its bail-in plans. German banks were a major beneficiary of this bailout. The ECB President's letter of 19 November 2010 can be found at http://www.ecb.europa.eu/press/html/irish-letters.en.html (checked on June 12, 2018).

standards for collateral) to provide liquidity to European banks (German as well as Greek) in the post-Lehman crisis.

Whereas in Ireland the government bailed out the creditors of its banks even though there was no legal obligation to do so, the reverse happened in Austria. After the insolvency of Hypo Group Alpe Adria (HGAA), an Austrian version of a Landesbank that had been owned by the province of Carinthia, the Austrian government refused to bail out the bank's creditors even though their loans had been guaranteed by Carinthia. Among the lenders to HGAA were Commerzbank, Deutsche Pfandbriefbank, the successor to HRE, and several Landesbanken. Lawsuits are still pending.[53]

Investment Banking

Deutsche Bank and Dresdner Bank tried to escape the constraints of the German markets by establishing full-fledged investment banking subsidiaries in London and the United States. Thus Deutsche Bank acquired control over Morgan Grenfell in London in 1989, recruited a large team of investment bankers from Merrill Lynch in 1995, and bought Bankers Trust in 1998. Dresdner Bank acquired London-based Kleinwort Benson in 1995 and US-based Wasserstein Perella in 2001. In the late 1990s, WestLB also tried to go this route, but withdrew quickly, with a € 3 billion loss.

Deutsche Bank's move into investment banking laid the basis for a vast expansion, with a quadrupling of its balance sheet from about € 0.5 trillion in the early 1990s to about € 2 trillion by 2008, the only German institution to be undoubtedly globally systemically important. The bank's ambition was to become a worldwide leader in investment banking, with a rate of return on equity (RoE) of 25 % before taxes.

The goal of a 25% RoE before taxes was regularly announced by Josef Ackermann, the bank's CEO from 2002 to 2012. However, the goal was far removed from reality. The

[53] The Austrian government's decision was taken in 2015 and based on a law implementing the European Union's Bank Recovery and Resolution Directive (BRRD) of 2014, which calls for a bail-in of private creditors. This use of a 2015 law to renege on guarantees given before 2005 (in the period of grace before guarantees for public banks were outlawed) is contested. The question is also to what extent guarantees given by a province can impose obligations on the central government. Interestingly, under the auspices of the European Banking Authority, the regulatory treatment of banks' exposures to guaranteed liabilities of provincial or regional governments presumes that central governments stand behind the guarantees, a point which is also of interest in the context of the Landesbanken.

average of Deutsche Bank's actual reported pre-tax rates of return from 2003 to 2011 was only 11.7%, despite an extraordinarily high leverage, with equity less than 2% of total assets. Rates above 20% were only reported in the years before the crisis, 2005 – 2007, when the bank had high earnings on its securitization business in the United States. The 2008 rate was a negative 16%.

Even these numbers are too high. Some of the returns that were earned came with legal risks that later on cost the bank well over € 10 billion in penalties to US and EU authorities. The bank had participated in all the wrongdoings of the decade, mis-selling of mortgage loans, mis-selling of mortgage-backed securities and CDOs, shorting securities while also selling them to third parties, manipulating the reporting of LIBOR and exchange rates to improve performance on interest rate and exchange rate bets, and so on.

Deutsche Bank's move into investment banking went along with a shift in power from Frankfurt to London and New York. The shift in power became evident when Anshu Jain, the head of investment banking in London, became one of the two successors to Ackermann in 2012. The shift in power was also evident in the fact that recurrent uncovering of losses from past investment banking activities, including the large penalties, had hardly any effect on bonus payments to investment bankers.[54] Whereas on the face of it, Deutsche Bank had taken over Morgan Grenfell and Bankers Trust, one sometimes could have the impression that the investment bankers in London and New York had taken over Deutsche Bank, using the high ratings that the bank got from its being too big to fail in its home base in order to obtain plentiful and cheap funding for their activities.[55] Recent events suggest that the power struggle inside the organization is still going on.[56]

Dresdner Bank's excursion into investment banking developed differently. Dresdner, Kleinwort, Wasserstein did not become the core of an expansion like that of Deutsche Bank.

[54] For an early and very detailed analysis, see Hein (2012).

[55] The story is not dissimilar to that of Swiss Bank Corporation, one of the two predecessors of today's UBS, in the early 1990s. At Swiss Bank Corporation, the integration of Chicago-based securities house O'Connor into the bank's decision making bodies contributed significantly to Marcel Ospel's ascent to the top and the subsequent dominance of investment banking inside the organization. For an account of governance failures and damage from the uncontrolled dominance of investment banking, see UBS (2008).

[56] Whereas Mr. Achleitner, the Chair of the Supervisory Board, publicly declared that Mr. Cryan had to leave as CEO because he did not move fast enough, previous reports had consistently commented that Mr. Achleitner, a former Goldman banker and in the past a firm supporter of Mr. Jain, was resisting Mr. Cryan's attempts to reduce the scale of the bank's investment banking.

Indeed it was shortly renamed into Dresdner Kleinwort because, following internal disputes, Mr. Wasserstein left the organization. However, the active presence of this investment banking branch in London and New York may explain why in 2008 Dresdner was much more exposed to risks from asset-backed securities than Commerzbank. [57]

3.4 Financing Ships

Whereas most attention has been paid to problems of real-estate and public-sector finance, the past decade has also seen a crisis in the area of ship finance. World trade and worldwide shipping grew strongly in the years before the financial crisis and then collapsed in the last quarter of 2008. Since then world trade has picked up again, but the shipping crisis is still going on. Trade growth has not yet been strong enough to catch up with capacity growth.

The following observations may explain what has been going on:

- The shipping industry is highly fragmented. The largest player, Maersk, has a market share of some 15 %, far from any position of dominance.
- In the fall of 2007, the European Commission rescinded its permission for shipping conferences providing cartelization of line shipping.
- The technology involves huge fixed/sunk costs for the ships and almost constant average variable costs.
- Transportation of containers is a homogeneous good.

Given these observations, one expects markets to be fairly competitive. If the technology is the same for all ships, then under competition, contributions to covering the costs of ships can only be earned if, at average variable cost prices, demand exceeds the available capacity. If the technology differs across ships, the more efficient ships are able to earn positive margins, but the less efficient ships are priced out of the market.

---

[57] In 2008, Dresdner Bank AG reported operating losses of € 6.2 billion, reducing the book value of equity from € 8.7 billion to € 2.5 billion. I do not share the assessment of Huber (2018, p. 875) that the two banks "followed a similar trading strategy and contributed approximately evenly to the trading losses of the joint institution". I have been unable to find information that would permit a decomposition of Dresdner's 2008 losses. However, Commerzbank's 2008 report lists remaining ABS of Dresdner as € 32 billion, which compares to € 11 billion for Commerzbank. In comparing these numbers, one must keep in mind that Commerzbank only took over about three quarters of Dresdner Bank. Allianz did retain significant amounts of ABS of Dresdner Bank. The 2008 Commerzbank report also indicates that substantial revaluation losses of Commerzbank were due to increasing spreads for public-sector debt, a position which seems to have played much less of a role with Dresdner Bank. The view that the two banks had followed similar strategies is also contradicted by the assessment contained in the European Commission's decision allowing Germany to provide support to Commerzbank, see the Commission's decision letter of May 7, 2009 in the case N244/09, http://ec.europa.eu/competition/state_aid/cases/231053/231053_959312_23_1.pdf

In the decade before 2008, the stock of new container ships and the stock of new orders for the construction of ships had strongly grown. When the crisis hit, the placing of new orders ceased, but the orders that had already been given could not be rescinded. As these orders were being executed, new capacity came into the market. Because construction takes a long time, this went on for quite a number of years, until 2012 or 2013. Since then, new orders have picked up again, now for larger ships with lower average variable costs of transportation, leaving hardly any hope that the older and smaller ships that have been lying at rest all over the world will ever come back into business.

German financial institutions have been much affected by this development because Germany has for a long time been a center of ship finance. As of 2009, about one half of the worldwide commercial shipping fleet was said to be funded through German financial institutions.[58] A 2011 investigation by the Deutsche Bundesbank found a total exposure of German banks to shipping loans equal to € 98 billion. This exposure was concentrated at a small number of bankers, in particular HSH Nordbank with € 34 billion, Commerzbank (with subsidiary Deutsche Schiffsbank) with € 22 billion, Nord LB with € 19 billion, and government owned Kreditanstalt für Wiederaufbau (KfW, with subsidiary KfW IPEX) with € 12 billion (all numbers for 2009).

The affected institutions have been slow to recognize losses on these position, let alone create transparency about them. Even so, it is clear that these losses have been and will continue to be substantial, in the case of HSH Nordbank at least € 11 billion, in the case of Bremen LB "only" € 1 billion, enough to force a merger with Nord LB. For Commerzbank, which was probably the first to fully recognize the depth and the persistence of the problem, the losses are commingled with other losses from Eurohypo.[59]

Ship finance had a long tradition with German banks in which tax subsidies played a big role. A typical construction would involve a limited partnership in which outsiders would

[58] I obtained some of the information used in this discussion in 2009 when I chaired a committee advising the Federal Government on applications by non-financial firms for government loans or loan guarantees under the auspices of a program to neutralize the effects of the feared credit crunch. German national shipping champion Hapag Lloyd (with a global market share of 4%) was one of the applicants.

[59] The € 22 billion exposure in the text appears in Commerzbank's 2009 annual report. The 2008 annual report had € 26 billion. However, as of 2012, Commerzbank had only written off 4% of its remaining exposure (HSH Nordbank only 1%!); by early 2013, according to newspaper reports, Lloyds Bank was already selling a ship loan portfolio at a 50% discount. See Hellwig (2013).

participate as limited liability partners, either directly or through a closed-end fund, and a limited-liability corporation, run by the shipper, would be the “unlimited”, managing partner. Returns on the partnership shares would receive privileged treatment in personal income taxation. Banks would earn provisions for selling these shares to doctors, dentists, lawyers, and the like. Banks would also earn returns by lending to provide the remainder of the funding, usually through ship mortgages, which might in turn be (partly) funded by issuing covered bonds.

In the run-up to the crisis, the boom mania of the shipping companies was matched by the banks. HSH Nordbank, founded in 2004, set out to become “the biggest financier of ships in the world”, and banks are said to have told shippers quite regularly to plan on a larger scale.[60] On the side of shippers, there also was a sense of bigger being better.[61] The potential cyclicality of the business seems not to have been understood.

[60] In the case of HSH Nordbank, around 2008, shipping loans amounted to some € 34 billion, while book equity was at € 5 billion and total assets around € 200 billion.

[61] The troubles of Hapag Lloyd were partly due to their having acquired Canadian shipping company CP Ships in 2005, at a very high price. Döhle, another company that applied for government support in 2009, had consciously expanded with a view to increasing its market share.

4. Underlying Developments and Problems

4.1 Weakness, Uncertainty, Unrest

We now take a step back and consider some of the underlying forces at work. We begin by noting that the decade before 2007 was marked by significant institutional change. We interpret this institutional change in terms of reactions to the pressures that built up during the 1990s, perhaps also to the opportunities that the changing world of finance was seen to offer, in particular through globalization, investment banking, and, not least, bonuses.

Hypovereinsbank, Hypo Real Estate, Depfa

Of the five large private banks, we have so far only mentioned three, Deutsche, Dresdner, and Commerzbank. The other two are Hypovereinsbank (€ 300 billion in total assets in 2008) and Deutsche Postbank (€ 200 billion in total assets in 2008). Hypovereinsbank (HVB) was created in 1998 through the merger of Bayerische Hypotheken- und Wechselbank and Bayerische Vereinsbank, two very old Bavarian banks with strong positions in retail banking as well as real-estate lending/covered-bond funding in Bavaria. At the time, Hypotheken- und Wechselbank had significant hidden losses from real-estate lending in eastern Germany in its books, so for the bank's major shareholders, Allianz and the Free State of Bavaria, the merger was a way to externalize some of the losses.[62]

HVB did not exist for very long. In 2005, it had itself taken over by the Italian bank Unicredit. Two years earlier, in 2003, it had divested itself of much of its real-estate and covered-bond business by putting that business into newly founded HRE and bringing HRE to the stock market. The divestiture was said to be a necessary condition for becoming attractive to a suitor who might provide the bank with a strong backing.[63]

Thus, HRE, the bank that ended up causing so much trouble in 2008, started out as a divestiture from an institution that had a problematic history and wanted to rid itself of an

---

[62] As mentioned in fn. 33 above, a few months after the merger, the bank's books for 1997 had to be rewritten, with an additional loss of over DEM 3 billion.
[63] Shortly after its genesis, HVB expanded into south-eastern Europe by acquiring Bank Austria/Creditanstalt (BA-CA) the largest Austrian bank, which had significant activities in the transition countries of eastern and south-eastern Europe. When Unicredit took over, they split BA/CA off from HVB and turned it into a subsidiary of their own.

unattractive business. The notion that HRE might have already have been a “bad bank”, a receptacle for the parent bank’s problems in real-estate lending, comes to mind. Even if that was not the case, the separation of HRE from the rest of HVB deprived HRE of the stable short-term funding that had been available through HVB deposits. The separation thus laid the basis for the bank’s subsequent liquidity problems.

In 2007, HRE acquired Depfa Bank plc, a Dublin-based bank involved in public-sector finance, with (partial) funding from covered bonds. Depfa’s history started with a German public covered-bond institution that was privatized in 1990 and split into public-sector financier Depfa and real-estate financier Aareal Bank in 2002. Following the split, Depfa had moved to Dublin, where regulation was softer. Once there, it engaged in much riskier investments, with very significant short-term wholesale funding. The acquisition accounted for more than one half of HRE’s 2008 losses.

Eurohypo

The other major institution in public-sector and real-estate finance was Eurohypo. This bank was created in 2003 as a joint undertaking of Deutsche, Dresdner and Commerzbank, which merged their covered-bond subsidiaries into one institution. The motivation may have been similar to the motivation of HVB, experiences of losses over a decade, probably also a desire to “free” equity by removing real-estate lending our of their balance sheets. Given the low rates of return in the real-estate lending/covered-bond funding business, this removal might provide a means of increasing rates of return on equity.

Subsequently, in 2005, Commerzbank decided that, instead of having Eurohypo be floated on the stock market, it would acquire Eurohypo alone. The argument seems to have been that, with a doubling of the balance sheet, Commerzbank would be a less likely target of a takeover attempt.

Allianz and Dresdner Bank

Allianz, the largest German insurer, had for a long time held a 25% stake in Dresdner Bank. The pressures that built up in the 1990s seemed to call for a major change. Following the failure of merger talks with Deutsche and Commerzbank, in 2001 Allianz acquired the remaining 75% of the bank's shares for some € 30 billion. The proclaimed aim was to develop and exploit synergies between banking and insurance; the subsequent expansion of the bank's investment banking activities was deemed to further this aim.

In actual practice, the synergies between Allianz and Dresdner Bank did not work out as expected, and the move into investment banking ended up with too large a stake in asset-backed securities and collateralized debt obligations in 2008. At that point, Allianz decided to sell (most of) Dresdner Bank again, rather than recapitalize it or wind it down. Commerzbank was a willing buyer, without much concern for the risks of the transaction.

Deutsche Bank and Retail Banking

As we have mentioned above, in the past, retail banking has consistently been profitable for the savings banks and the cooperative banks and not so profitable for the large private banks. The matter is epitomized by the behavior of Deutsche Bank over the past two decades. In 1995, Deutsche Bank created a direct-banking subsidiary, Bank 24. In 1999, it shifted most of its retail deposit and portfolio services customers into this subsidiary, which was renamed Deutsche Bank 24. For customers who had been with the parent before, services under the new regime were much worse bit if they wanted to stay with the parent, they would have to pay large fees. In 2002, the operation was reversed because by then the bank had learnt that retail investors were more profitable if one did not insult them.

A similar experience occurred a decade later. In several steps over the years 2008 – 2012, Deutsche Bank acquired 93 % of the shares of Deutsche Postbank, the fifth of the large private banks. Deutsche Postbank was the result of the privatization of the German postal and telecommunications system and its separation into three parts, Deutsche Post for postal services, Deutsche Telekom for telecommunications, and Deutsche Postbank for what used to be the postal giro system. For a certain time, Deutsche Postbank had remained a subsidiary of Deutsche Post, but in 2008/09, it was put up for sale. For Deutsche Bank, the acquisition seemed attractive because Deutsche Postbank has a very large depositor base. By gaining access to such a large depositor base, it seemed that Deutsche Bank would obtain a good opportunity for earning profits through the cross-selling of financial services.

This prospect did not work out. Deutsche Bank had failed to appreciate that the customers of Deutsche Postbank were mainly people who used their postal giro accounts to economize on the costs of bank transfers and other services, which is not exactly the kind of clientele that would snap up expensive financial products. So Deutsche Postbank looked like the real-estate business before, a low-return business that required significant equity backing. In 2015, Deutsche Bank decided to put Deutsche Postbank up for sale. When prospects for such a sale turned out to be too dim, that decision again was rescinded (in 2017), and Deutsche Postbank was fully integrated into Deutsche Bank.

Summary Assessment

The vagaries of these institutions, with dramatic changes and reversals in organizational alignments, provide the picture of a sector in which burdens from the past and ongoing changes in external conditions had created severe uncertainty. Participants did not really know how their institutions might remain viable. In some cases, such as Deutsche Bank's retail strategy, the ignorance was due to neglect or even willful blindness. In other cases, such as HRE, the straights in which the bank found itself may have left no alternative but to take a chance and gamble. Some of the major decisions, such as the Dresdner acquisition by Allianz, the Eurohypo acquisition by Commerzbank, and the Depfa acquisition by HRE, may also have involved an element of hybris.

The element of hybris most definitely appears in the 2007 acquisition of the Austrian bank Hypo Group Alpe Adria (HGAA) by Bayern LB. The acquisition was meant to provide Bayern LB with a basis for expanding into south-eastern Europe, where HGAA had become very active. At Bayern LB, the acquisition was decided in a shotgun procedure, so nobody was able or willing to observe that HGAA had serious problems. In 2009, the bank was sold again to the Republic of Austria. The ca. € 3 billion that Bayern LB had paid for the equity was lost, as were at least € 1 billion in loans. The final distribution of losses remains subject to legal disputes.[64]

[64] In contrast to Bavaria, Austria had an investigation of the HGAA scandal by an independent commission. The commission report is one of the most scathing documents to emerge from the financial crisis. See Griss (2014).

4.2 Incentives and Governance

Ultimately, any thinking about why certain actions were taken must focus on the decision makers' incentives. For the investment bankers who acquired securities that ended up saddling the institution with losses, the answer must be that incentive schemes paid bonuses for the acquisitions without sufficient corrections for the losses. The mechanisms are described in Partnoy (2009, 2010) for the United States and in the 2008 *Shareholder Report on UBS's Writedowns*, UBS (2008), for the Swiss bank UBS. In the year in which a position was established, an estimate of its "fair value" then would be entered into the bank's balance sheet, the excess of this "fair value" over an estimate of the funding cost would be attributed to profits, and this presumed contribution to profits would form the basis for assessing bonuses, without concern for risks that might hit later. In the absence of active markets, the "fair value" estimates would be based on models, rather than market prices, with ample scope for letting optimism about the future or outright manipulation distort the numbers. We do not have any comparable information about German banks. However, the history of Deutsche Bank's ignoring penalties for past activities in assessing bonuses suggests that similar mechanisms were at work here as well. This conjecture is also in accordance that in several instances where banks tried to impose clawbacks on bonus payments when the crisis struck, they were prevented from doing so by the courts.[65]

The 2008 *Shareholder Report on UBS's Writedowns* notes that the corporation's board had never engaged in a comprehensive assessment of the business strategy followed by UBS Investment Bank in the years after 2004 and that it had never engaged in a risk assessment for this strategy. We suspect that similar failures of internal governance happened in German banks as well. With reference to UBS, Hellwig (2009) discusses the probable causes of such failures: internal power relations of the organization, an unwillingness to question the behavior of a goose that seems to be laying golden eggs, the return-on-equity culture that is created by a system of bonuses based on return on equity, a panic for yield in an environment with low interest rates and low intermediation and maturity transformation margins, a system of internal and external communication focused on rates of return at the expense of risks.

We suspect that similar forces were also at work in German banks, reinforced by the fact that the changes of the 1990s had not yet been digested and that, for the Landesbanken, the lapse

[65] In particular, Dresdner Kleinwort lost several such lawsuits with its former investment bankers.

of public guarantees posed an existential threat. The following observations seem relevant. First, following the Daimler-Chrysler merger in 1998, executive remuneration in Germany began to contain large bonus elements.[66] The scope for personal enrichment was much enlarged. In the 1990s, Deutsche Bank had the internal problem that its investment bankers in London were paid on scales that were unthinkable in Frankfurt. In the 2000s, that problem had disappeared. Large bonus payments had become a feature of corporate culture all over the organizations; in the cases of IKB, HRE, or Dresdner Bank, the CEOs in charge very much shared in the benefits from putting assessed "fair values" of acquired positions into the organizations' profit statements and balance sheets.

Second, on several occasions, divestiture considerations were publicly explained with reference to the need to eliminate assets that did not generate sufficient rates of return on equity.[67] The most recent example is Deutsche Bank's failed attempt to sell Deutsche Postbank. When Deutsche Bank found out that Postbank customers were not eager to accept Deutsche Bank's offerings in cross-selling financial services, they came to the conclusion that Deutsche Postbank tied up "too much" of their equity and that a sale would "free equity" to be put to uses where it would earn higher rates of return. The same reasoning had previously been given in the divestiture of HRE by HVB and the merger of the large banks' covered-bond subsidiaries into Eurohypo, which was initially due to be brought to the stock market. This reasoning also played a role in the decisions of the large vertically integrated electricity producers in Germany to divest themselves of their transmission grids even before such divestitures were imposed by EU legislation.

Commerzbank's reversing its strategy on Eurohypo and acquiring the other banks' shares, rather than bringing Eurohypo to the market, may be seen as the exception that proves the rule. The concern that, on a stand-along basis, Commerzbank might be a takeover target and its managers might lose their jobs seems to have been more important than the concern to maximize the organization's rate of return on equity and thereby the managers' bonuses.

Strategies of "economizing on equity" are also evident in the behavior of equity ratios. Whereas among large banks, in the late 1990s, a ratio of equity to total assets below 4% was

---

[66] The economics and politics of the change are discussed in Hellwig (2005).

[67] On the fallacies involved in this reasoning, see Admati et al. (2013), as well as Ch. 7 of Admati and Hellwig (2013).

the exception rather than the rule, by 2007, a ratio of equity to total assets above 4% was the exception.[68] As of December 31, 2007, Commerzbank, Deutsche Bank, and Hypo Real Estate all had equity to total assets below 2%, Dresdner Bank and most of the Landesbanken between 2 and 3 %. For some banks, these ratios are actually too high because they do not take account of positions in special-purpose vehicles off the banks' balance sheets. These low equity positions were a major reason why the losses that appeared in 2007 and 2008 would quickly raise doubts about the solvency of the institutions.

Economizing on equity was facilitated by regulation. For example, the covered-bond institutions benefited from the fact that debt of a central government that was denominated and funded in the currency of the country is treated as riskless so that no equity backing is required; they also benefited from the low statutory risk weights for real-estate mortgages. These rules explain why HRE (and Dexia) had so little equity funding. Institutions with large trading books benefited from the ability to use internal models for assessing market risks, which had been granted by the 1996 amendment to the Basel agreement. This ability explains the low levels of equity funding of the three large banks (and UBS).[69]

It is of interest to note that some banks did not join the fray. We already noted the more fortunate fate of Aareal Bank, which had higher equity (above 4 %), which did not go into subprime-related securities, and which did not rely on structured-investment vehicles off their balance sheet. Another example would be Hessische Landesbank (Helaba) or, across the border, Swiss bank Crédit Suisse. (Nord LB avoided subprime-related securities, but got deeply into ship finance.) When asked for why they did not join the fray on subprime-related securities, people from both Helaba and Crédit Suisse said that their banks had been badly burnt before and therefore had become much more cautious, Helaba in the 1980s and Crédit Suisse in 2001, following the burst of the tech and telecoms bubble. They also acknowledged that, in 2005 and 2006, it had been difficult to resist the pressures of analysts and the media

[68] ASC (2014).

[69] Most of those banks that did not hold asset-backed securities through off-balance sheet vehicles tended to put them in the trading book in order to avail themselves of the model-based approach to assessing equity requirements. This is why fair-value-accounting losses in 2007 and 2008 were so dramatic and why the trading book played a much larger role than the bank book; see FSA (2010). The ability to use internal ratings to assess credit risk, legislated under the auspices of Basel II in 2004, did not play much of a role in the crisis because implementation of Basel II had barely begun.

who were suggesting that such cautiousness was stuffy, an indication of an inability to modernize.[70]

4.3 The Macroeconomic Environment

The major macroeconomic (and political) event of the decade before the crisis was the creation of the European Monetary Union. The creation of a single currency affected the developments that we have sketched here in several important respects. First, it eliminated exchange rate risk for cross-border transactions within the euro area. The elimination of exchange rate risks contributed to the integration of wholesale markets in the euro area, including, in particular, interbank borrowing and lending. The expansion of German banks' lending to Irish, Spanish and Greek banks that we noted above must be seen in this context.

The elimination of exchange rate risk in the euro area also reduced and almost eliminated the banks' awareness of risks attached to sovereign exposures. Despite the fact that, in a currency union with a supranational and independent central bank, sovereign debt was subject to a default risk, risk premia for sovereign debt in the euro area all but disappeared.[71] Holdings of sovereign debt, which previously had been concentrated with national financial institutions became more widely distributed so that the exposures of banks to their own sovereigns actually fell in the pre-crisis era.[72]

A second effect of monetary union was to eliminate the exchange rate as a potential warning signal. Whereas in the past exchange rate movements had reflected national policies, or investors' perceptions of national policies, such public signals were now missing. For national politics, this meant that people criticizing ongoing developments could no longer point to the exchange rate as an indication that something was wrong. Nor did there seem to be a need for an analogue of the "franc fort" strategy by which in the 1980s France had motivated fiscal discipline as a way of maintaining the exchange rate in the ESM.

[70] Such media behavior could again be observed in Switzerland in 2013 and 2014, when UBS was downsizing its trading activities. At the time Swiss media were complaining that, even as UBS was getting out, Deutsche Bank was eager to step in and to avail itself of all those profit opportunities in trading. Since 2015, such voices have become silent, for a reason.
[71] For an early analysis of the phenomenon, see Bernoth et al. (2004).
[72] ESRB (2015).

A third effect involved a Wicksellian mechanism that caused developments in different member states to diverge. With nominal interest rates equalized through the disappearance of exchange rate risk, real interest rates differed across member states because inflation rates differed. Thus in the early 2000s, Ireland and Spain had inflation rates on the order of 5%, implying a real interest rate at or below zero, and Germany had an inflation rate between 1% and 2%, implying a real interest rate of over 3%. The proximate cause of the difference in inflation rates was a lack of cross-border integration of goods markets; however there was more to the effect than a simple change in the relative prices of non-tradables. The implied difference in real rates of interest seems to have induced differences in investment demands of non-financial firms and cross-border capital flows funded the investments. In both Ireland and Spain, the investment demand had a strong real-estate component; the real-estate booms fed into real-estate price dynamics and reinforced the difference in perceived real interest rates. The Wicksellian dynamics which thus developed and which fed the bubbles in the two countries were funded by capital imports into Ireland and Spain, in particular from Germany.[73]

On the German side, these developments went along with a change in the current account. Following unification in 1990, the German current account balance had been negative for a decade (between 0 and -2% of GDP). After 2000, it grew steadily, reaching its 1989 peak of 4% of GDP by 2005 and rising to almost 7% of GDP by the beginning of the crisis.

Since we are talking about a general-equilibrium development, it is difficult to assign causality. Some people see the German current-account surpluses as a reflection of demographic developments, the baby boomers saving for old age, as well as a (technology-induced?) decline in German firms' investment demands.[74] The German government regularly points to the "competitiveness of German industry", without however mentioning that this competitiveness reflects not only the productivity gains of German companies but also the cautiousness of German trade unions after the Schröder government's Agenda 2010 reforms. (The limitation of unemployment benefits to one year, with subsequent support from welfare payments seems to have shifted the preferences of the median union member so that in the years 2004 – 2007, there were hardly any nominal wage increases at all despite significant productivity growth.)

[73] For a more detailed account of the mechanism, see Franz et al. (2010).
[74] Weizsäcker (2014)

Be that as it may, the important point for our analysis is that large savings and large and growing current-account surpluses provided ample domestic funding for the German banks' foreign adventures. Moreover, in the periphery countries of the euro area, the Wicksellian dynamics mentioned above induced a large demand for the funding they offered.

A fourth effect of the currency union was of course that the "internal real devaluation of the German euro" took place in the years 2004-2007 was not neutralized by an external revaluation, at least not in relation to the other members of the euro area. Current account surpluses thus grew ever larger, feeding in to outward capital flows. These developments probably explain why the numbers involved in the German banks' activities and the losses they suffered, were so large.

4.4 The Role of the Government

As far as we can tell, the supervisors were entirely passive in the developments that we have described. They do not seem to have intervened on the issue of problem loans in the 1990s, in particular at the Bavarian banks. They tolerated the practice of holding asset-backed securities in structured-investment vehicles without any equity. They also tolerated the practice of HRE in relying on wholesale funding from the money market for a substantial part of their portfolio.

In response to criticism about this passiveness, supervisors have often raised legal arguments. For example, they were not empowered to interfere with banks' relations with structured-investment vehicles because these structured-investment vehicles were legally separate and interference in business relations between institutions was not in their domain. Moreover, they could not use large-exposure rules to put a stop to parent banks' promises of liquidity assistance to their structured-investment vehicles because, under the given legal norms, such promises would fall under large exposure rules only if they had a maturity of more than 365 days, which the banks involved were careful to avoid. The fact that the assets which needed funding had maturities of more than 365 days was not taken into consideration.

Responses that the Federal Government has recently (!) given to information requests of the parliamentary party of the Greens show that the supervisors did not react to the lack of diversification in HSH Nordbank's desire to become the largest financier of ships in the world or to the lack of due diligence involved in Bayern LB's acquisition of Hypo Group Alpe Adria. On HRE's short-term funding strategy, the HRE investigative committee of the Bundestag committee in 2009 was told that wholesale money markets had been considered a reliable source of funding. This view also is evident in the recent replies to the questions of the Greens about the supervisor's approach to special purpose vehicles.

Such thinking and such lack of attention to the economics of the situation probably reflect the legalistic tradition of German administrative authorities, which are dominated by concerns about having to justify interventions in administrative courts, which traditionally take a dim view of authorities interfering with the autonomy of private business. In some instances, however, the inactivity may also have other reasons. After all, interfering when a bank is slow to recognize problems with loans is part of the legal mandate of the authority. And apart from the problem loans of the 1990s, the supervisor was also extremely slow to raise the problem of loans for ship finance. Significant write-downs in that area only came in the context of the EU-mandated asset quality review of 2014, when the job was done jointly by the national and the new European supervisors.

In assessing the supervisors' performance in these years, it is important to appreciate that until the creation of the euro area Single Supervisory Mechanism in 2014, the German supervisor was not independent but was subject to orders from the Federal Minister of Finance. Which orders were given is not publicly known, but some information is available about the political stance of the government.

Two sets of considerations seem to have been important. First, any interference with the Landesbanken was to be avoided. The reason is simple: The heads of the regional governments are important players in the overall political system, not just as heads of government in their own regions but also as participants in legislative procedures in Berlin. In contrast to the United States, with a two-chamber parliament in which the upper house consists of directly elected senators, the upper house in Germany's two chamber system is made up of representatives of the regional governments. Given the need to have their goodwill in legislation, the Federal Government would be unlikely to mess with them on such petty things as the behavior of their para-fiscal institutions for funding industrial policy outside of parliamentary procedures.

Thus the Federal Government backed the regional governments in the 2000/2001 negotiations with the European Commission about the public guarantees for these banks. In the crisis, in 2008, the Federal government stepped in to provide guarantees for these banks without making any attempt to take control, let alone impose a consolidation of these institutions. In subsequent negotiations with the European Commission about the extent of state aid granted in the crisis and beyond, the Federal Government always backed the regional governments' requests for permission to provide their Landesbanken with more state aid. And in the run-up to the crisis, the supervisory authority was even more passive towards institutions like HSH Nordbank or Bayern LB than towards the large private banks.

Second, the red-green government that had come in in 1998 had a program of active industrial policy, of promoting "national champions". The erstwhile government monopolists Deutsche Telekom, Deutsche Post, Deutsche Bahn were to be transformed into worldwide leaders in telecommunication and logistics. And in 2004, Chancellor Schröder publicly called for the financial industry to reorganize itself so as to create a "national champion".[75] (At that time, the idea of Deutsche Bank acquiring Postbank was already around, but as yet no agreement was found. The notion of "national champion" was again talked about in 2008, when the decision by Allianz to sell Dresdner Bank was taken up by Commerzbank.)

In this context, it is worth noting that, in a much-cited address in 2006, a leading official of the Federal Ministry of Finance, publicly welcomed the development of securitization and of special-purpose vehicles and announced that the government was determined to ensure that German financial institutions would have an active and prominent part in this new development in the financial sector.[76] Thus we conjecture that the supervisors' remarkable tolerance towards investments in asset-backed securities held in special purpose vehicles was in fact mandated by the ministry. In this context, we also draw attention to the findings of

[75] The 2004 Biennial Report of the Monopolies Commission (Monopolkommission), which I then chaired, bears the title „Competition Policy in the Shadows of ‚National Champions'", with a few paragraphs suggesting that the Chancellor's proposal for the financial sector would create too-big-to-fail problems and the moral hazard that goes with such problems. The Official Response to this report that the government sent to the Bundestag poo-pooed the warning saying that the supervisors had everything under control.

[76] Asmussen (2006). At the time, Mr. Asmussen was division head ("Ministerialdirektor"). Subsequently, after having played an active role in the bailout measures of 2008, in 2009 he was promoted to deputy minister ("Staatssekretär") and in 2012 became a member of the ECB's Board of Directors. In his function as division head, he also represented the Ministry of Finance on the supervisory boards of Kreditanstalt für Wiederaufbau (KfW) and of Industriekreditbank (IKB), in which KfW held a 38% stake, and is said to have promoted IKB's move into investments in asset-backed securities held off-balance sheet in special purpose vehicles.

Thiemann (2012), according to which tolerance towards the use of special purpose vehicles as a means of circumventing internationally agreed banking regulation, in particular, equity requirements, was characteristic of countries whose governments were bent on promoting "their" banks as "champions" in international competition.

The 2005 liberalization of covered-bond finance must also be seen in this context. This law served not only the purpose of Landesbanken that wanted to expand into this sector without creating special subsidiaries. It also was seen as a basis for turning Germany into a European center for real-estate and public-sector finance, funded by German-law covered bonds, with buyers of covered bonds from all over the world and lending all over Europe (at least). In 2008, the need to protect the brand name "Pfandbrief" (covered bond) was the major reason given for the provision of government support to HRE.

5. The Crisis Decade

We finish our account with an overview over the German experience in the crisis decade since 2007. We begin by noting that there was not just one crisis, but many, and they are not over yet:

- the US subprime and global financial crisis 2007 – 2009,
- the euro area sovereign debt crises, in particular, in Greece since 2010,
- the Irish real estate and banking crisis 2008 – 2010,
- the Spanish real estate and banking crisis 2008 – 2012,
- the Cypriot banking and sovereign debt crisis 2013,
- the financial turbulence in the second half of 2011,
- the crisis in shipping and ship finance since 2008,
- the problems of nonperforming loans, in particular, in Italy, since 2015.

Not all of these crises affected German financial institutions directly, but they all affected the political environment.

5.1 The US Subprime and Global Financial Crisis 2007 - 2009

Early Crisis Developments

In August 2007, write-downs on asset-backed securities and the freeze of markets for asset-backed commercial paper immediately affected two mid-sized German banks. Sachsen LB and Industriekreditbank (IKB) had used structured-investment vehicles with short-term funding backed by liquidity guarantees to invest in what turned out to be "toxic" securities. In the case of Sachsen LB, the problem was handled through a takeover by much larger Landesbank Baden-Württemberg (LBBW); with a limited loss guarantee from the government of Saxony. IKB was provided with capital support, most of it from federally-owned Kreditanstalt für Wiederaufbau (KfW), which ended up raising its share in IKB from 38% to over 90%. KfW also took over many questionable securities of IKB. Even so, the sale of IKB to private equity firm Lone Star in the summer of 2008 brought less than € 150 million, leaving KfW, i.e. the Federal Government, with a loss of just below € 10 billion.[77]

[77] Kaserer (2010).

Over the next year and a half, many of the Landesbanken acknowledged problems and losses from their investments in “toxic” securities. In all cases, their owners, the regional governments stepped in, with additional equity and with guarantees against losses on specified portfolios. A typical example is HSH Nordbank, with write-downs of over € 4 billion in 2008 and 2009; this bank was given € 3.5 billion in new equity and a second-loss guarantee of € 10 billion by the regional governments of Hamburg and Schleswig-Holstein.

In the crisis after the Lehman insolvency, the problems of HRE caused the Federal Government to step in in a big way. In a shotgun process, the government proposed and the parliament passed a law which empowered the government to provide up to € 400 billion in guarantees for debt titles issued by banks and to provide up to € 80 billion to recapitalize banks. An entirely new institution, the Finanzmarktstabilisierungsanstalt (FMSA); was set up to administer this support.

Government Support

In contrast to the United States, the Federal Government’s support was not imposed on the banks but offered as an option. Equity injections were used by four banks, Aareal Bank, Commerzbank, HRE and West LB.[78] Guarantees were used by the Association of Private Banks’ deposit insurance organization and by eight banks, Aareal Bank, Commerzbank, HRE (€ 124 billion), IKB, Bayern LB, HSH Nordbank and two smaller banks in the real-estate/covered-bond sector.[79] The need for support was concentrated in the covered-bond sector and in institutions that had invested in “toxic” securities, in particular the Landesbanken. Concerning the latter, it is pertinent to note that Bayern LB, LBBW, HSH Nordbank, and WestLB received substantial support, equity and guarantees, from the regional governments.[80]

As it provided support, the Federal Government shied away from taking control and cleaning up the system. It only imposed the condition that managers in charge of banks receiving

[78] See Expertenrat (2011). In the case of WestLB the equity injection of € 3 billion in early 2010 was dwarfed by the regional government’s support and may have been merely a declaration of solidarity of a CDU-led Federal Government for a CDU-led regional government facing an upcoming election.
[79] Düsseldorfer Hypothekenbank and Corealcredit Bank. See FMSA (2013).
[80] The public banks represent this support as a matter of owners standing in for their organizations, thus reducing systemic fallout from their losses. However, the ultimate funder of this support, as of that of the Federal Government bailouts, is the taxpayer.

support must have annual remuneration limited to € 500000. The prevailing myth had it that the crisis was entirely due to problems in the United States, first the subprime crisis, then the disastrous decision to let Lehman Brothers go into insolvency, and then the post-Lehman panic.[81] The question why Germany was so strongly affected was kept out of public discussion, after all, this was "a panic", and the Swedish experience of 1992 had shown that government intervention in such a crisis was likely to be profitable.[82]

Guarantees were a means of providing support without taking control and without immediately burdening the federal budget. The preferred mode of injecting equity took the form of a "silent participation", which is effectively junior debt, except that, by contracts, payouts are contingent on profits before payouts being positive and, in the event of a write-down of capital, the nominal value of the debt could be written down as well, with a privileged claim to subsequent write-ups. This instrument was used for Aareal Bank, WestLB and Commerzbank.

In the case of Commerzbank, the Federal Government also took a 25% position (a blocking minority, accompanied by one seat on the supervisory board) in the bank's common equity, paying € 1.8 billion for the position, besides € 16.4 billion for a silent participation. This mode of intervention prevented Commerzbank from raising new equity in the market in the relatively good year 2010. To get out of the trap, they chose a daring construction to repay € 14 billion of the silent participation in early 2011, only to find themselves back in a corner when later in 2011 the haircut on Greek debt was announced and the October EU Summit mandated a large increase in equity ratios by mid-2012.[83] The € 3 - 5 billion in losses that the government suffered from its support of Commerzbank would probably have been smaller if they had relied on common stock from the start and used the 2010 respite to start selling again.

[81] See, for example, the government's position as developed in the majority view in the 2009 report of the Bundestag's investigative committee on the HRE bailout.
[82] Thus, the German Finance Minister Peer Steinbrück in discussions about the October 2008 legislation. The fact that the Swedish government's losses in the 1990s had been smaller than expected (about 1.5% of GDP, according to Englund 1999) was confused into their actually having been profitable.
[83] For an analysis of the difficulties posed by the silent participation in Commerzbank, see Expertenrat (2010). Close to € 3 billion of the 2011 repayment of the silent participation came out of the bank's own cash, at the expense of the buffer of its equity above regulatory requirements. The remainder came out of new equity, sold to investors and to the government itself, which maintained its 25% stake in the bank.

In the case of HRE, the Federal Government did acquire common stock (€ 7.4 billion in several steps 2009-2010), but found itself unable to overcome the resistance of previous shareholders to take control. Following the passage of a law empowering it to “expropriate” these shareholders, the government proceeded to a squeeze-out, in which the minority shareholders of a company received € 1.30 per share. Given that, on December 31, 2008, the bank had negative equity and would have defaulted on its obligations if it had not been for the € 124 billion in government guarantees, the need to pay previous shareholders a positive amount at all is remarkable.

The Politics of Support

Political discussion about the government’s intervention was dysfunctional. On all sides of the political spectrum, there was outrage about the need for a bailout and the departure from the principle of liability of market participants for their actions. The imposition of limits on remunerations was welcomed but this part of the discussion diverted attention away from the underlying causes. Voices that emphasized the principles of a free-market economy protested that the government should not compound the sin of the bailouts by taking control, “expropriating” the owners and “nationalizing” the banks.[84] The notion that liability of owners for problems generated on their watch may involve a loss of control rights to whoever provides support was lost. So was the observation that what was called a “nationalization” of banks in fact would have been a “federalization” of banks that were owned by the regional governments. One may suppose that Mr. Steinbrück, the Federal Minister of Finance, who previously had been head of the regional government of Nordrhein-Westfalen, with responsibility for WestLB, was not displeased to see the ideological debate about “nationalization” divert attention away from the role of the Landesbanken in the crisis.

Legalisms played an important role in the debate. On the face of it, the law on banking regulation (“Kreditwesengesetz” – KWG) would have allowed the authorities to intervene, say with HRE, even before any violation of equity or liquidity requirements had occurred. This law however contained a formulation that such interventions must serve the objective of creditor protection, which was interpreted to mean that it must follow the pattern of insolvency proceedings, beginning with an asset freeze, regardless of any systemic damage

[84] For example the Monopolkommission.

that might ensue. Fear of systemic damage was given as reason for not making use of this clause in the law and instead providing banks with the option to obtain guarantees and equity.

The argument would be more credible if subsequent reforms had properly addressed the problem. However, the Bank Restructuring Act of 2010 continued to maintain creditor protection as the main objective of intervention and to circumscribe the conditions for intervention in terms that were guaranteed to provide a basis for subsequent lawsuits.[85] Even today, after several further changes in the law, including changes under the auspices of European legislation, the regional government of Hamburg is claiming that an attempt to wind down HSH Nordbank would lead to chaos because the legal rules leave no room for the provision of liquidity in the process.[86]

The argument would also be more credible if Germany had taken a more active part in regulatory reform after the crisis. In fact, Germany (together with France and Japan) was one of the retarding forces in Basel III negotiations, resisting in particular the introduction of the principle that "equity" meant common stock, rather than silent participations.[87] More recently, the German negotiators have been the staunchest opponents to the "completion of Basel III", or, as the industry calls it, "Basel IV", the measures intended to limit abuses of the ability to use internal models for risk assessments and to take better account of the risks in real-estate finance, in particular the risks attached to maturity transformation. The German negotiation stance suggests a greater interest in the concerns of the industry, in particular the public banks, than in the protection of financial stability and of taxpayers.

Unlike the United States, Iceland, the United Kingdom, or Switzerland, Germany has not had an investigation of the crisis and its causes by an independent commission. The coalition treaty of the new government in 2009 stipulated that such a commission be created, but that

[85] See Hellwig (2012).

[86] On the need for liquidity provision in bank resolution and the lack of attention to this issue in the different pieces of legislation, see Hellwig (2012, 2014).

[87] On this point, the German negotiators succeeded in gaining a compromise that allowed silent participations to stand in for equity with banks that do not have access to the stock market. Following this compromise they turned around, complained about the discrimination against institutions that are organized as joint-stock corporations, and obtained an extension to those institutions in the European legislation. For an account, see Admati and Hellwig (2013), Ch. 12. Some have criticized us for giving only journalistic source for this material. In fact, our account is based on discussions with many participants, including my own observations at the European Systemic Risk Board.

plan was never implemented. Thus there never was a systematic discussion of questions such as:

- To what extent was the German affectedness by the crisis due to weaknesses inherent in the three-pillar system, in particular the privileged position of the Landesbanken?
- To what extent was the gambling that had taken place and indication of there being excess capacity in the industry, combined with artificial barriers to exit that were in fact reinforced by the government's support in the crisis?
- How much blame must be put on supervisory/political forbearance?
- How much blame must be put on poor governance, in particular on the failure of the public owners of the Landesbanken, to rein in these institutions' gambling?
- How much blame must be put on previous governments' industrial-policy ambitions?
- Was the Commerzbank/Dresdner Bank merger encouraged by a government keen to avoid a foreign takeover, and was Commerzbank made to understand that, if problems arose, they would be able to count on government support?

In the fall of 2010, the parliamentary party of the Greens in the Bundestag asked the government to provide information about the behavior of the supervisors before the crisis and about certain aspects of the interventions in the crisis. The government refused on the grounds that such information might cause a renewal of the crisis. A few months ago, the Federal Constitutional Court ruled that this denial of information violated the rights of the Bundestag *vis à vis* the government. The answers that have since been provided would never have been a cause of a panic, but they do give a strong impression that supervisory performance before and in the crisis had been highly deficient. Denying the information avoided a discussion about the subject.

The European Commission's State Aid Control

The one institution that did exert a modicum of control was the European Commission. Under the Treaty on the Functioning of the European Union (TFEU), any state aid, i.e., any support that a Member State provides to any undertaking that is active in markets must be approved by the Commission, which considers the implications of the state aid for competition, and potential distortions of competition, in the European Common Market. In the context of the financial crisis, the Commission's rules for state aid to banks were much softened. Even so, the Commission's state aid control did have a significant impact.

Thus, in the case of Commerzbank, the Commission imposed a restructuring with a view to ensuring the long-run viability of the bank. It also required the bank to reduce its total assets over a number of years, to close down a number of activities, such as activities in a number of other countries, and to sell Eurohypo by 2014; when it became apparent that such a sale would be unrealistic, the Commission agreed that Eurohypo would be wound down, a process that was completed by 2016.

In the case of WestLB, after protracted negotiations, the Commission ended up requiring that the bank be wound down. In the case of HSH Nordbank, after an episode where the regional governments' second-loss guarantees had first been reduced to € 7 billion and then again increased to € 10 billion, the Commission ended up requiring that the bank be either sold to market investors or wound down. For HRE, the Commission did allow the German government to take € 174 billion of bad assets into FMS Wertmanagement, an asset management company created for the purpose, at prices implying state aid amounting to some € 16 billion and then to privatize the remainder under the name of pbb – Deutsche Pfandbriefbank.[88] The Commission also imposed requirements for the pricing of silent participations and guarantees, for example a 9% coupon rate for silent participations, to be paid in any year in which the bank showed a profit under German accounting rules.

The downsizings and the bank closures that were imposed by the European Commission represent the only contribution by policy makers to address the problems of excess capacity and artificial barriers to exit. The case-by-case approach that is inherent in the operation of state aid control prevented any more comprehensive approach to the problem. For example, given that the Federal Government had taken positions in all of Commerzbank, HRE and WestLB, was it really efficient to wind down Eurohypo and West Immo while reprivatizing part of what had been HRE? A more systemic approach might have considered a combination of merging and downsizing all three institutions. However, given the government's abstention from any active interference, the Commission's case-by-case approach may have been the only way to get any downsizing at all.

[88] The argument for allowing the transfer at inflated prices was that the government owned both HRE and FMS Wertmanagement, so no advantage to private parties was involved. The fact that the sequence of events from the initial bailout of HRE to the final privatization of pbb involves the use of government funds to resurrect a market participant who otherwise would have disappeared seems to have not been given much weight.

5.2 Later Crises

Greece, Ireland, Spain

The so-called “euro crisis”, which broke into the open with the Greek debt crisis in May 2010, is often interpreted as a sovereign debt crisis in a currency union whose member states have no sovereignty over their currency. This interpretation is too narrow. Whereas the crises in Greece and in Portugal did have their origins in sovereign borrowing, the crisis in Ireland and Spain had their origins in real-estate bubbles and the damage suffered by banks in the bursts of the bubbles. Sovereign borrowing and sovereign debt entered only because tax revenues suffered from the downturn in economic activity as the bubbles burst and because bailouts of banks’ creditors involved significant increases in government debt. Moreover, in all crises, the negotiating parties and the authorities were mindful of the exposures of banks in other member states of the euro area.

In the case of Greece, external foreign debt at the end of 2009 amounted to € 82 billion, of which € 31 billion were held by French banks and € 23 billion by German banks. In 2010, the first “rescue package” for Greece, amounted to € 110 billion, € 80 billion from the other member states and € 30 billion from the IMF. Of this amount, some € 88 billion were intended for servicing and outstanding exterior debt. With this public support for Greece, French and German banks would have had to take significant losses.[89]

In July 2011, when the European Banking Authority published the results of its stress test, it also provided information about sovereign exposures of large banks. The 110 banks in the sample held an aggregate of € 98 billion in Greek sovereign debt; two third of this debt was held by Greek banks, one third, i.e. € 33 billion by banks of other members states, about € 8 billion by French banks and € 9 billion by German banks. The official support for Greece had given French and German banks an opportunity to reduce their exposures, some by not renewing debt that came due, leaving it to the official creditors to step in, some by selling Greek debt on the market, probably to Greek and to Cypriot banks.[90] By 2012, when most

[89] See Wissenschaftlicher Beirat (2011).
[90] See EBA (2011).

Greek private-sector debt was written down by over 50%, their exposures had been much reduced.
German banks also benefited from the decisions of the Irish and Spanish governments to deal with the crises of their banking systems without bailing in senior unsecured debt holders.

Deutsche Bank

In the summer of 2016, Deutsche Bank became a focus of market jitters. In the United States, there had been indiscretions that the US government was going to charge the bank another $ 14 billion in penalties, more than twice the provisions that they had already made. An unnamed government source had told a newspaper that there had been talks about a potential bailout in a crisis, and the government had rejected any such notion. A few days later, another newspaper reported that, according to sources from the Ministry of Finance, people there were working on emergency plans. The bank's share price dropped to around € 10, whereas a year earlier it had been above € 25. After a while the rumors and the market jitters disappeared and the situation stabilized again. The penalties ended up at "only" $ 7.2 billion. The share price rose back to around € 17 in mid-2017.

The episode is symptomatic of the development of Deutsche Bank. In the crisis, the bank did not need any direct support, though it certainly benefited from public support to other institutions.[91] In terms of equity, Deutsche Bank had been one of the weakest institutions before the crisis, and it has remained ever since, especially when considering tangible common equity. Over the past decade, they had a series of equity issues, but the effects on their balances sheets were largely neutralized by "unexpected" losses, including penalties of well above € 10 billion in total. More recently, the tax cuts in the United States have required them to take a loss of over € 2 billion on deferred tax assets and initiated another downturn in market assessments of their future (with a renewed downward movement in share prices).

The episode also suggests that someone in Berlin does not really know how to deal with this globally systemically important institution and how to deal with the media that are more interested in excitement than in financial stability.

[91] The bailout of AIG was important. So was the bailout of HRE, both directly, because Deutsche Bank held HRE debt, and indirectly, because in an HRE insolvency, the banks' association's security fund might have been called upon, and Deutsche Bank would have been the most important contributor.

The difficulties that the bank has in moving away from the brink are to some extent a reflection of internal power struggles that I discussed above. To some extent they reflect the deeper problem that the underlying changes in the German financial system that began in the 1990s have undermined the traditional business models of the large private banks. A recurrent complaint, by analysts and by bankers, notes the absence of sustainable opportunities for profits.

This dilemma may be one reason why the internal power struggles have slowed down the institution's cleanup of its past difficulties.[92] If one has little confidence in the home market, one may want to limit the downsizing of investment banking; but then one must keep paying the investment bankers large bonuses even if these payments come at the expense of the bank and its shareholders. A more radical departure from the strategy that had been initiated in the 1990s would require confidence in the alternatives.

Ships and the saga of HSH Nordbank

Since about 2015, German banks have begun to address the problems posed by the shipping crisis. As of this writing, however, the problems are far from over. In particular, NordLB and Deutsche Verkehrsbank are still significantly exposed.

Meanwhile, the saga of HSH Nordbank, the erstwhile "largest financier of ships in the world" is coming to an end – thanks to the European Commission. As mentioned above, following the bank's losses on subprime-related securities, in 2009 the bank's owners provided the bank with additional equity and with a second-loss guarantee for € 10 billion. The European Commission mandated that large fees be paid for the guarantee, so in 2011, the bank asked that the guarantee be reduced to € 7 billion. In the spring of 2013, the governments of Hamburg and Schleswig-Holstein raised the guarantees again to € 10 billion on the grounds that this would reduce the bank's risk-weighted assets and allow it to meet Basel III equity requirements more easily. No risk for taxpayers, because the shipping crisis would be over by the end of 2014 and, with a probability close to one, no more than € 1.2 billion of the

[92] On these conflicts, see Hein (2012 and elsewhere). Downsizing and cleaning up problem loans and other assets seem to have accelerated only after the 2015 leadership change, and even then progress was slow.

guarantee would be needed![93] The European Commission treated this operation as a new case of state aid (rather than a modification of the first case) and accepted it only under that condition that, if the bank was not sold to private investors by February 28, 2018, it would have to be wound down.[94]

On February 28, 2018, the governments of Hamburg and Schleswig-Holstein announced that the bank would be sold to private investors for € 1 billion; at the same time, they announced that the € 10 billion guarantee would be fully used up and that, in a side deal, a portfolio of problem loans with € 6.5 billion exposure at default would be separately sold to the buyers of the bank. The latter portfolio had a book value a little over € 3.5 billion and was sold for a little under € 2.5 billion.[95] The side deal effectively takes resources out of the bank and poses risks for the bank's creditors, including the many savings banks for which it was natural to deposit with "their" Landesbank.

Total costs to tax payers since 2009 are now acknowledged to be on the order of € 11 – 14 billion; this estimate does not include the losses from before the 2009 bailout. At the time of the 2009 bailout the risks from ship finance were already visible, and one member of the Schleswig-Holstein government resigned in protest against the bailout. However, in parliamentary hearings at the time, the representatives of the German supervisor commented that they considered HSH Nordbank's business to be viable. A special examination of German banks' exposures to ship finance in the spring of 2013 also does not seem to have raised any concerns let alone an intervention with the bank's owners.

Meanwhile the bank has expanded its new lending, with a focus on renewable energy. While politically welcome, the question of whether this again might be a case of under-diversification does not seem to have been asked.

6. Concluding Remarks

[93] At the time, one of the opposition parties in the Hamburg legislature asked me to act an expert in the matter. The claims made by the governments were patently unrealistic even then. See Hellwig (2013).

[94] The Commission also allowed the bank to transfer up to € 6.2 billion (exposure at default) in problem assets to a government-owned bad bank. The transfer that occurred, € 5 billion in problem loans, valued at € 2.4 billion, with € 2.6 billion counted against the guarantee, by now has caused an additional € 0.7 billion in losses.

[95] The latter information was not officially announced but was obtained by *Wirtschaftswoche* magazine.

The German experience in the financial crises of the past decade stands out in that there is no one story to tell. Whereas the Irish and Spanish crises can be explained in simple terms by boom-and-bust developments in real-estate markets, the German experience has no such simple explanation. It involves many strands of developments. Costs to taxpayers were large because the institutions and the losses were large, and the political system shied away from imposing losses on anyone, including the holders of subordinated and hybrid debt instruments, the forms of debt that actually count towards capital requirements under Basel rules.

The underlying cause must be seen in the difficulties that arose when a traditional financial system was exposed to radical change in the 1990s. The traditional system had serious flaws of its own, most importantly the excess capacity in wholesale banking that had come with the market entry of the Landesbanken in the 1970s, and the artificial barriers to exit that were due to the regional government's guarantees for the Landesbanken. The separation between pillars and the weakness of the large private banks in retail banking must also be mentioned. As long as competition was not too intense however these weaknesses did not undermine the viability of the system.

Change came in the 1990s with the intensification of competition and the erosion of margins. Banks reacted by searching for new ways to earn money, by expanding abroad, by going into US-style investment banking, by investing in "toxic" securities, by expanding their borrowing and their maturity transformation. Innovations in finance and the dismantlement of borders, in particular through European Monetary Union, made for a sense of opportunity. The European Commission's ban on guarantees for the public banks and the delay in the implementation of this ban added to the growth in activities.

Meanwhile, the internal and external governance of the banks was not up to the challenges posed by the new developments. Changes in remuneration systems provided incentives for risk taking, in Germany as in other countries. Regulation and supervision were weak, in part because the Federal Government was more interested in an industrial policy that would promote "its champions" in global competition than in financial stability. In part, the weakness of the supervisors was due to the politics of German federalism, which prevented a stricter interference with the Landesbanken.

The government’s handling of the crisis and developments since then suggest that some of these fundamental weaknesses are still present. The cost to German taxpayers has been large, but the economy and the public finances were strong enough to bear the cost without much of a problem, at least at the federal level. The basic rules of the symbiosis between the polity and the financial industry have not been changed.

Since the crisis, many institutions have shrunk a lot, in part because the crisis had shown them the cost of overexpansion, in part because that was a condition for the European Commission’s approval of bailouts. However, there has been little exit. Dresdner Bank and WestLB are the prominent exceptions. The problems of excess capacity, intense competition, and weak profitability that began to plague the industry in the 1990s are still there. The lack of profitability is currently exacerbated by the fact that, under the prevailing monetary policy, interest rates are very low and yield curves are very flat.

7. References

Acharya, V.V., and P. Schnabl (2009), Do Global Banks Spread Global Imbalances? The Case of Asset-Backed Commercial Paper during the Financial Crisis 2007-2009, Paper presented at the 10th Jacques Polak Annual Research Conference, International Monetary Fund, Washington, D.C.

Admati, A., and M. Hellwig (2013), *The Bankers' New Clothes: What's Wrong with Banking and What to Do about It*, Princeton University Press, Princeton, N.J.

Admati, A.R., P.M. DeMarzo, M.F. Hellwig, P.C. Pfleiderer (2013), Fallacies and Irrelevant Facts in the Debate about Banking Regulation, in : C. Goodhart, D. Gabor, J. Vestergaard, and I. Ertürk (eds.), Central Banking at a Crossroads, Anthem Press, London, 33 – 50.

Admati, A.R., P.M. DeMarzo, M.F. Hellwig, P.C. Pfleiderer (2018), The Leverage Ratchet Effect, *Journal of Finance* 73, 145 – 198.

ASC (2014), Is Europe Overbanked? Report 04 of the Advisory Scientific Committee of the European Systemic Risk Board, Frankfurt, Germany.

Asmussen, J. (2006), Verbriefungen aus Sicht des Bundesfinanzministeriums, *Kredit und Kapital* 19, 10 – 12.

Baltensperger, E., and J. Dermine (1987), Banking Deregulation in Europe, *Economic Policy* 2 (4), 63 – 109.

Bernoth, K., J. v. Hagen, and L. Schuknecht (2004), Sovereign Risk Premia in the European Government Bond Market, ECB Working Paper Series 369, European Central Bank, Frankfurt.

Brunner, A., J. Decressin, D. Hardy, and B. Kudela (2004), Germany's Three-Pillar Banking System: Cross Country Perspectives in Europe, Occasional Paper No. 233, International Monetary Fund, Washington, D.C.

Cas, S.M., and I. Peresa (2016), What Makes for a Good 'Bad Bank'? The Irish, Spanish and German Experience, Discussion Paper 036, Directorate General for Economic and Financial Affairs, European Commission, Brussels.

Deutscher Bundestag (2017), Staatliche Hilfen für die Commerzbank: Eine vorläufige Bilanz, Wissenschaftliche Dienste, WD 4 – 3000 – 052/17, Berlin, 21 June 2017.

Dunbar, N. (2011), *The Devil's Derivatives: The Untold Story of the Slick Traders and Hapless Regulators Who Almost Blew Up Wall Street… and Are Ready to Do It Again*, Harvard University Press, Cambridge, MA.

EBA (2011), European Banking Authority 2011 EU-Wide Stress Test Aggregate Report, London, 15 July 2011.

Edwards, J. and K. Fischer (1994), Banks, Finance and Investment in Germany, Cambridge University Press, Cambridge, UK.

Englund, P. (1999), The Swedish Banking Crisis – Roots and Consequences, *Oxford Review of Economic Policy* 15, 80 – 97.

ESRB (2015), ESRB Report on the Regulatory Treatment of Sovereign Exposures, European Systemic Risk Board, Frankfurt.

Expertenrat (2011), Strategien für den Ausstieg des Bundes aus den krisenbedingten Beteiligungen an Banken: Gutachten des von der Bundesregierung eingesetzten Expertenrats, Berlin, 24 January 2011.

Fischer, K.-H., and C. Pfeil (2004), Regulation and Competition in German Banking: An Assessment, in: J.P. Krahnen and R.H. Schmidt (eds.), The German Financial System, Oxford University Press, Oxford, UK, 291 – 349.

Fischer, M.J., C. Hainz, J. Rocholl, and S. Steffen (2014), Government Guarantees and Risk Taking Incentives, ESMT Working Paper ESMT-14-02, ESMT European School of Management and Technology, Berlin.

FMSA (2013), SoFFin: Letzte ausstehende Liquiditätsgarantie zurückgeführt, Press Release, Bundesanstalt für Finanzmarktstabilisierung, Frankfurt, 13 December 2013.

Fohlin, C. (2007), Finance Capitalism and Germany's Rise to Industrial Power, Cambridge University Press, Cambridge, UK.

Franks, J. and C. Mayer (1995), Ownership and Control, in: H. Siebert (ed.) *Trends in Business Organization: Do Participation and Cooperation Increase Competitiveness?*, J.C.B. Mohr (Siebeck), Tübingen, Germany, 171 – 195.

Franz, W., C. Fuest, M. Hellwig, H.-W. Sinn (2010), A Euro Rescue Plan, CESifo Forum 11 (2), 101 – 104.

FSA (2010), The Prudential Regime for Trading Activities: A Fundamental Review, Discussion Paper 10/4, Financial Services Authority, London.

Gerschenkron, A. (1962), *Economics Backwardness in Historical Perspective*, Harvard University Press, Cambridge, MA.

Griss, I. (2014), Bericht der unabhängigen Kommission zur transparenten Aufklärung der Vorkommnisse rund um die Hypo Group Alpe Adria, Vienna, 2 December 2014, http://cdn.untersuchungskommission.at/pdf/BerichtHypo-Untersuchungskommission.pdf (checked on June 12, 2018).

Guinnane, T. (2001), Cooperatives as Information Machines: German Rural Credit Cooperatives, 1883 – 1914, *Journal of Economic History* 61, 366 – 389.

Hein, D. (2012), Der Goldesel der Investmentbanker, *Frankfurter Allgemeine Zeitung* 20 May 2012.

Hellwig, M.F. (1991), Banking, Financial Intermediation, and Corporate Finance, in: A. Giovannini and C. Mayer (eds.), *European Financial Integration*, Cambridge University Press, Cambridge, UK, 35 - 63.

Hellwig, M.F. (1995), Systemic Aspects of Risk Management in Banking and Finance, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 131 (1995), 723 - 737.

Hellwig, M.F. (2005), Market Discipline, Information Processing, and Corporate Governance, in: K.J. Hopt, E. Wymeersch, H. Kanda, H. Baum (eds.), *Corporate Governance in Context: Corporations, States, and Markets in Europe, Japan, and the US*, Oxford University Press, Oxford, 379 - 402.

Hellwig, M.F. (2009), Systemic Risk in the Financial Sector: An Analysis of the Subprime-Mortgage Financial Crisis, Jelle Zijlstra Lecture, Netherlands Institute for Advanced Studies, Wassenaar 2008; reprinted in: *De Economist* 157, 129 – 208.

Hellwig, M.F. (2012), The Problem of Bank Resolution Remains Unsolved: A Critique of the German Bank Restructuring Law, in: P.S. Kenadjian (ed.), *Too Big To Fail – Brauchen wir ein Sonderinsolvenzrecht für Banken?*, De Gruyter Verlag, Berlin and Boston, 35 – 63.

Hellwig, M.F. (2013), Stellungnahme zur Anhörung des Haushaltsausschusses der Bürgerschaft der Freien und Hansestadt Hamburg über die Wiedererhöhung der Ländergarantie für HSH Nordbank, Hamburg, 30 April 2013.

Hellwig, M.F. (2014), Yes, Virginia, There is a European Banking Union! But it May Not Make Your Wishes Come True, in: ÖNB: Österreichische Nationalbank, *Towards a European Banking Union: Taking Stock,* 42nd Economics Conference 2014, 156 – 181.

Huber, K. (2018), Disentangling the Effects of a Banking Crisis: Evidence from German Firms and Counties, *American Economic Review* 108, 868 – 898.

Johnson, S. (2002), Coase and the Reform of Securities Markets, *International Economic Journal* 16, 1- 19.

Kaserer, C. (2010), Staatliche Hilfen von Banken und ihre Kosten, *Initiative Soziale Marktwirtschaft: Texte zur Sozialen Marktwirtschaft 2*.

Körner, T., and I. Schnabel (2013), Abolishing Public Guarantees in the Absence of Market Discipline, Ruhr Economic Paper Nr. 437, August 2013, Ruhr-Universität Bochum, Technische Universität Dortmund, Universität Duisburg-Essen, RWI Essen.

Krahnen, J.P., and R.H. Schmidt, (eds.) (2004), *The German Financial System*, Oxford University Press, Oxford, UK.

Lewis, M. (2010), *The Big Short: Inside the Doomsday Machine*, Norton, New York.

Monopolkommission (2004), Wettbewerbspolitik im Schatten 'Nationaler Champions: XV Hauptgutachten 2002/03, Nomos-Verlag, Baden-Baden

OECD (1992), *Banks under Stress*, OECD, Paris.

Partnoy, F. (2009), *Infectious Greed: How Deceit and Risk Corrupted the Financial Markets, Public Affairs*, New York.

Partnoy, F. (2010), *F.I.A.S.C.O.*, Norton, New York.

Prowse, S. (1994), Corporate Governance in an International Perspective: A Survey of Corporate Control Mechanisms among Large Firms in the United States, the United Kingdom, Japan, and Germany, BIS Economics Papers no. 41, Bank for International Settlements, Basle.

Rajan, R., and L. Zingales (2003), The Great Reversals: The Politics of Financial Development in the 20th Century, *Journal of Financial Economics* 69, 5 – 50.

Riesser, J. (1910), Die deutschen Großbanken und ihre Konzentration, 4th ed., Gustav Fischer, Jena.

Storn, A. (2013), Das Desaster der HRE-Rettung: 237 Euro von jedem, *Die Zeit*, 26 September 2013.

Storn, A. (2015), Zur Sonne, zur Freiheit, Die Zeit, 30 July 2015.

Thiemann, M. (2012), Out of the Shadow? Accounting for Special Purpose Entities in European Banking Systems, *Competition and Change* 16, 37 – 55.

Tilly, R.H. (1989), Banking Institutions in Historical and Comparative Perspective: Germany, Great Britain and the United States in the Nineteenth and Early Twentieth Century, *Journal of Institutional and Theoretical Economics* 145, 189 – 249.

UBS (2008), Shareholder Report on UBS's Writedowns, Zürich, April 18, 2008.

Wasserfallen, W., and C. Wittleder (1994), Procing Initial Public Offerings: Evidence from Germany, *European Economic Review* 38, 1505 – 1517.

Weizsäcker, C.C. v. (2014), Public Debt and Price Stability, *German Economic Review* 15, 42 – 61.

Wenger, E. (1996), Institutionelle Defizite am deutschen Kapitalmarkt, mimeo, University of Würzburg, Würzburg.

Wissenschaftlicher Beirat (1997), Wagniskapital, Gutachten des Wissenschaftlichen Beirats beim Bundesministerium für Wirtschaft, Bonn, April 1997.

Wissenschaftlicher Beirat (2011), Überschuldung und Staatsinsolvenz in der Europäischen Union, Gutachten des Wissenschaftlichen Beirats beim Bundesministerium für Wirtschaft und Technologie, Berlin, January 2011.