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Chapter 4

The banking system: Lessons from the financial crisis

The German banking system came under pressure during the financial crisis, not least due to its significant exposure to toxic assets which originated in the US. In the short run, the stability of the system has been achieved, in large part through substantial government support measures. However, ensuring adequate capitalization of the banking system remains a major challenge going forward and may require more active government involvement. The underlying causes of the banking sector problems are related to: i) *the activities of the Landesbanken which benefitted from government guarantees without a proper business model;* ii) *weak capitalization and high fragmentation of the whole banking system, possibly related to the particularly rigid three-pillar structure; and* iii) *deficiencies in banking regulation and supervision. The challenge is to address these three causes in order to raise the long-run stability of the banking system.*

The banking sector was hit hard in the crisis

Although real GDP growth in Germany remained buoyant until early 2008, German banks were among the first to suffer from the crisis on financial markets that reached Europe in mid-2007, leading to several bail-outs of banks by the government. This disconnect between bank performance and domestic economic developments is due to the direct and indirect exposure of German banks to developments in international financial markets.

Significant direct exposure to toxic assets

In particular, banks were directly affected through their substantial exposure to structured credit products originated in the US, often through off-balance sheet vehicles (Table 4.1). In total, toxic structured credit securities in the German banking system are estimated to amount to EUR 230 billion (2¾ per cent of 2008 total assets).[1] According to Bloomberg, German banks accounted for around 7% of global write-downs on such assets in the period January 2007 to October 2009. Although almost all groups of banks are affected, the state-owned *Landesbanken* stand out, accounting for one-third of all losses even though their share of business volume is only 20%. Recent estimates suggest that significant risks still remain on the balance sheets and that further write-downs could amount to EUR 10-15 billion, most of it due to Collateralized Debt Obligations (Bundesbank, 2009).[2]

Table 4.1. **Exposure of selected German banks to conduits and special investment vehicles prior to the crisis**

	Ownership	Conduit- and SIV financed assets	
		In % of capital	In % of assets
Sachsen-Finanzgruppe	Public (Landesbank)	1 126	30.3
WestLB	Public (Landesbank)	542	12.7
IKB	Private	494	20.5
Dresdner Bank	Private	364	9.9
Landesbank Berlin	Public (Landesbank)	179	2.2
Bayern LB	Public (Landesbank)	170	5.1
HSH Nordbank	Public (Landesbank)	126	4
Deutsche Bank	Private	114	3.3
HVB	Private	105	6.6
NORD LB	Public (Landesbank)	89	2.9
Commerzbank	Private	85	2.2
Helaba	Public (Landesbank)	68	1.1
DZ-Bank	Private (Co-operative)	61	1.3
LBBW	Public (Landesbank)	59	1.7
KfW	Public	58	2.6

Note: Comparability is limited by different dates and varying definitions.
Source: Fitch Ratings (2007), *ABCP Concerns Trigger Liquidity Issues for German Banks*, Germany Special Report, August.

Adverse effects from the turmoil in money markets

In addition, notwithstanding the fact that German banks are less reliant on borrowing in financial markets than banks in other countries, some institutions indirectly suffered from the substantial turmoil in money markets following the collapse of Lehman Brothers as they could not roll over their wholesale funding. The most prominent casualty of this development was Hypo Real Estate, which had to be rescued by the government at the end of September 2008. The weakness in the domestic economy, by contrast, has not yet affected the banking system significantly, although write-downs on loans are likely to rise sharply (Bundesbank, 2009).

Massive government bailouts have stabilized the system...

As of August 2009, the volume of the government's rescue programmes amounted to 24% of 2008 GDP, broadly comparable with that in other countries; the average EU country provided 26% of GDP and the United States 26% of GDP (Stolz and Wedow, 2009).[3] The government's actions can be divided into several steps. In a first step, from August 2007 until the fall of Lehman Brothers in September 2008, government involvement comprised mostly stand-alone actions for individual institutions. During this period, four banks (IKB, WestLB, BayernLB and SachsenLB) received capital injections, credit lines and asset-backed security loss guarantees. In a second step, a more comprehensive support package was introduced following the rescue of Hypo Real Estate at the end of September 2008. The government proceeded on 5 October 2008 by guaranteeing all private bank accounts and on 13 October 2008 announced the setup of a EUR 480 billion Financial Market Stabilization Fund (SOFFIN). SOFFIN can guarantee up to EUR 400 billion of bank financing and use EUR 70 billion for recapitalization and asset purchases (the amount can be increased by EUR 10 billion on the approval of the Budget Committee of the parliament). So far, a few banks have received government capital through the SOFFIN and several have obtained guarantees.[4] Banks that obtain help from SOFFIN have to cap the salary of board members at EUR 500 000 and are not allowed to pay bonuses.

The first two phases in the government's crisis response were thus primarily dealing with the immediate threat of banking failure and avoiding bank runs. Since then, the discussion has moved towards addressing the balance sheet problems of the banking sector at large, notably the removal of bad assets. While the SOFFIN can purchase assets from banks, only one bank has made use of this option so far, which may be related to the fact that the maximum amount is restricted to EUR 5 billion per institution. Thus, in July 2009 the government put forth a plan to set up individual bad banks which do not require immediate government funding (Box 4.1). The intention was to break the vicious cycle of deleveraging and uncertainty that emerges when assets previously not at risk become impaired.

Box 4.1. **The government's bad bank scheme**

In July 2009 parliament passed a law on the establishment of bad banks. Two types of bad bank were envisaged, one allowing the transfer of toxic assets to a special purpose vehicle (SPV) (which can be used by both private and public banks) and one allowing the establishment of public sector vehicles targeted at public sector banks and allowing them to transfer a broader set of assets (this is called the "consolidation model"). Neither vehicle requires authorisation to conduct banking business nor has to fulfil regulatory capital requirements.

Box 4.1. **The government's bad bank scheme** *(cont.)*

Under the SPV model, financial institutions may apply to the SOFFIN to set up a bad bank to which they can transfer structured credit products (no loans). In exchange, the SPV issues securities equal to either the book value (as of 30 June 2008) of the transferred assets minus a 10% discount or the real economic value[1] (whichever is higher). These securities have a government guarantee (under the SOFFIN guarantee scheme), for which the bank has to pay a fee, and may be used for refinancing operations at the ECB. As a consequence, the participating bank does not have to fear further write-downs on those assets and the guaranteed bonds they receive in return reduce capital requirements due to their lower risk weighting, thus increasing lending capacity. At the time of the transfer, the expected losses of the SPV are calculated (equal to the difference between the estimated true value of the transferred assets minus a discount and their transfer value) and spread over a period of up to 20 years. The transferring bank has to cover these losses in equal instalments out of future net profits to the extent that these would be paid out to shareholders.[2] The shareholders also remain liable for any losses that exceed those estimated at the time of transfer and need to pay them out of future distributed earnings.[3] This structure is important as under both German and IFRS accounting rules, banks normally need to build up reserves for future liabilities (which would mean that the losses effectively remain on the banks' balance sheets). However, if a liability depends on future earnings and the decision of the supervisory board whether to pay out a dividend or not, the bank may not have to account for it as it is only an indirect liability. This accounting trick therefore effectively cleans the balance sheet from losses associated with the transferred assets. However, the treatment of such future liabilities under IFRS accounting rules is still waiting for a final verdict from the International Financial Reporting Interpretations Committee (IFRIC).

In order to attract new capital, the transferring bank may issue preference shares (also with voting rights) having preferential treatment over the SOFFIN. Banks participating in the scheme have to be available for stress testing under the SOFFIN's guidelines, the results of which are not published, however. Rather than removing the assets by selling them to the SPV, the intended model works more like a balance sheet trick: the shareholders remain liable for the losses but they do not have to be put on the balance sheet and thus do not adversely affect capital. Applications for setting up a bad bank under the SPV model had to be submitted by 22 January 2010, but no bank had announced to set up such a scheme.

Under the consolidation model, banks are allowed to transfer not only structured credit products but also other debt securities as well as loans and receivables to a public sector vehicle (PSV). This vehicle is organisationally and economically independent and does not have to mark-to-market assets (German accounting rules under HGB apply). It can be set up either under federal law under the SOFFIN (*Anstalt in der Anstalt*) or under state law (*Anstalt des öffentlichen Rechts nach Landesrecht*). The purpose is to remove whole portfolios of non-core assets or business units (assets and liabilities) with a view to shrinking the balance sheet and restructuring the bank. This scheme is therefore particularly aimed at facilitating restructuring of the *Landesbanken*, which are in need of finding a new business model (the scheme is thus also called "consolidation model"). If the PSV is set up under federal law, structured securities that are transferred may receive in return securities that are guaranteed by the SOFFIN as is the case in the SPV model (this is not possible if the PSV is set up under state law). The risks related to the transferred assets have to be borne by the owners of the banks, *i.e. Länder* and regional savings banks associations, as they remain owners of the assets. The future losses of the PSV have to be paid out of net profits of the transferring bank and the owners if the earnings are insufficient. The loss liability of the regional savings bank associations is capped at the extent of liability they had on 30 June 2008. So far only two banks are planning to set up a PSV.[4]

1. However, the value of the transferred asset may not exceed its book value on 31 March 2009. Only assets that the bank acquired before 31 December 2008 may be transferred. The discount to the transferred asset's book value is only applied if the bank retains a core capital ratio of at least 7%. The real economic value is estimated by the transferring bank and is checked by an expert third party nominated by SOFFIN and confirmed by the banking supervisors.
2. If in any year, the profit available for payout to shareholders is lower than the annual loss instalment, the loss compensation to be paid in future years will be increased accordingly.
3. The loss may also be covered by issuing shares to SOFFIN. If at maturity the SPV ends up with a profit, this will be given to the shareholders of the transferring bank.
4. WestLB wants to transfer assets worth EUR 85 billion and Hypo Real Estate is planning to transfer EUR 210 billion.

... but the clean-up of bank's balance sheets needs to proceed more forcefully

Participation in these bad bank schemes has been very limited. Only two banks decided to transfer assets with one of the two transactions replacing an earlier asset transfer with SOFFIN mentioned before. Banks may still be hesitant as there remains some uncertainty regarding the accounting of the future liabilities arising from losses on its toxic assets under IFRS rules (Box 4.1). Also, the scheme was intentionally set up as a voluntary one so that participation could have negative reputation effects for the bank.

With the lessons from earlier banking crises suggesting the importance of recapitalization of asset-cleansed banks, the limited use of the government's scheme is worrisome and could unnecessarily prolong the crisis or prevent a sustained recovery (OECD, 2009a). Therefore, the authorities should play an active role by closely monitoring capital adequacy. One way to proceed is to pursue mandatory stress-tests of the whole banking system to identify those institutions that are undercapitalized. In order to provide public funds if needed and as a last resort, to those banks that are in need of capital but that are not able to raise it from private sources, current support instruments should be maintained.

What factors led to the impact of the crisis on German banks and how to fix them?

Beyond the immediate challenge of restoring and maintaining the stability of the banking system, the underlying causes of the crisis need to be understood in order to draw lessons for reform. The evidence points to the importance of three connected factors:

- The role of the *Landesbanken*.
- Structurally low profitability and capitalization of German banks.
- Severe shortcomings in banking supervision.

The state-owned Landesbanken invested heavily in toxic assets...

The German financial system is distinguished by two features: *First*, it is a bank based rather than a capital-market based system. For example, the ratio of bank assets to GDP is higher than in most OECD countries and stock market capitalisation as a ratio of GDP is lower. *Second*, the structure of the banking system is very fragmented, with the public sector exerting a strong influence (Box 4.2). The share of the German banking system in

Box 4.2. **The German three-pillar banking system**

The German banking system is divided into three pillars: private commercial banks, public-sector banks and co-operative banks with the distinction being made on the basis of their legal form.[1] It is dominated by universal banks (accounting for 97% of all institutions and 75% of assets) and the majority of institutions are not strictly profit-maximizing entities (82% of institutions and 44% of assets).

Private commercial banks account for around one-tenth of all credit institutions in Germany and for around one-third of the total business volume. They comprise the large banks and smaller regional banks, private banks and branches of foreign banks. While the large banks are truly universal banks, combining retail and corporate banking business with investment banking activities, the regional commercial banks have a strong local presence and are often engaged in special activities like housing finance. The smaller private banks often specialise in industry financing and wealth management. Foreign banks play only a small role.

Box 4.2. **The German three-pillar banking system** *(cont.)*

Public sector banks include savings banks, which are owned by the state governments (*Länder* or municipalities), and the *Landesbanken*, which are usually jointly owned by the savings banks and the state governments.[2] Together they account for one-third of total business volume. Savings banks offer a wide range of banking services and have to serve the public welfare (*e.g.* they are obliged to open up a current account for every applicant). Savings banks are also universal banks but are limited in their regional activity (the "regional principle"); thus, they hardly compete with other savings banks, but only with private or co-operative banks in their region. Their core business is retail banking and relationship banking to SMEs and they maintain the largest branch network of all banking groups. The traditional role of the *Landesbanken* was to act as central institutions for the savings banks (serving as clearing houses, holding their excess liquidity reserves, providing marketing services and access to capital markets and offering savings banks clients investment banking services, access to foreign markets and credit on a larger scale) and serve as the main bank of the respective *Land* in which they are located in (*e.g.* pursuing the interest of the state in regional business development). However, these roles, notably acting as central institutions for the savings banks, have decreased in importance over time and the *Landesbanken* have increasingly operated in similar ways to private commercial banks on an international scale.

Due to their public ownership, savings banks and *Landesbanken* used to enjoy a guarantee by the public founding entity in the event of default (*Gewährträgerhaftung*) as well as a maintenance guarantee (*Anstaltslast*) whereby the owners ensure that the bank can meet its financial obligations at all times (i.e. providing liquidity support and capital injections if the bank is threatened by insolvency).[3] This guarantee was less important for the savings banks as they are mostly refinanced by deposits, but very important for the *Landesbanken* due to their market refinancing. In 1998, private banks initiated proceedings against the system of state and municipal guarantees. Following a ruling by the European Commission that these guarantees were not in line with state aid regulations, a compromise in February 2002 between the European Commission, the federal government as well as the *Länder* and the Association of Savings Banks and *Landesbanken* required the abolition of the guarantee obligation while existing liabilities were still fully covered, and the replacement of the maintenance guarantee (Fischer and Pfeil, 2004). However, a generous phasing-out period until July 2005 allowed the banks to enter liabilities with government guarantee at a maximum duration until 2015.

Credit co-operative banks comprise the largest number of independent institutions among the banking groups. Together with their head institutions they account for around one-tenth of overall business volume. They are owned by their members who receive a profit-dependent dividend. These institutions, however, are not standard profit-maximizing entities, their function is to support the business of their member-owners. The main difference from a corporation is that members usually only have one voting right, irrespective of the size of their investment in the co-operative. The two central institutions of the co-operative banking group provide a wide array of services to the individual co-operatives, similar to the *Landesbanken*.

Mortgage banks and building and loan associations (*Bausparkassen*) operate in all three sectors and account for 13% of the balance sheet total. In addition, a number of banks with special tasks exist in the private and public sector, such as development banks, the *Industriekreditbank* and the publicly-owned Kreditanstalt für Wiederaufbau (KfW), which together account for around 11% of business volume.

Box 4.2. **The German three-pillar banking system** *(cont.)*

This three-pillar system has changed little over time as most mergers occur within each pillar. While private-sector banks in general do not have the opportunity to take stakes in public-sector banks, there are no restrictions for public-sector banks to take over private banks. Takeovers of credit co-operative banks are made difficult due to the regulation that each member has one voting right.

Table 4.2. **Structure of the German banking sector**

	Balance sheet total (EUR million)	% of total	Number of institutions	% of total	Domestic branches
Private commercial banks	2 407	31	283	14	11 277
Big banks	1 441		5		
Regional banks	764		173		
Branches of foreign banks	202		105		
Savings banks group	2 590	33	448	22	
Landesbanken	1 539	20	10		482
Savings banks	1 050	13	438		13 457
Credit co-operative group	934	11	1 201	60	
Regional institutions	269	3	2		12
Credit co-operatives	665	8	1 199		12 344
Mortgage banks	824	11	19	1	56
Building and loan associations	189	2	25	1	1 872
Special purpose banks	897	11	19	1	31
Total	**7 841**	**100**	**1 995**	**100**	**39 531**

Source: Bundesbank. Data refers to March 2009 (balance sheet volumes) and 2008 (number of institutions and branches).

1. The following is based on Schmidt and Tyrell (2004) and Hackethal (2004).
2. In total there are currently seven *Landesbanken*: Landesbank Baden-Württemberg (LBBW), Bayerische Landesbank (BayernLB), WestLB, HSH Nordbank, Norddeutsche Landesbank (NordLB), Landesbank Hessen-Thüringen (Helaba) and Landesbank Berlin (LBB). Three other *Landesbanken* exist, but they are majority-owned by other *Landesbanken* (such as Bremer Landesbank and Landesbank Saar) or are divisions of other *Landesbanken* (in the case of Landesbank Rheinland-Pfalz).
3. In practice, the *Anstaltslast* prevents a default and thus the *Gewährträgerhaftung* serves more to strengthen the maintenance guarantee (Sinn, 1997).

public ownership prior to the crisis amounted to around 40% of total assets, by far the largest share among OECD countries (Portugal came in as second with a share of 25%).[5] In 2008, four of the ten largest German banks by assets were publicly owned. Apart from some special purpose banks, this mainly reflects the savings banks group (along with associated mortgage banks and building and loan associations) including the *Landesbanken*, which account for one-fifth of the total assets of the banking system (equal to the share of the five big private commercial banks).

... due to governance problems,...

The publicly-owned *Landesbanken* are at centre stage during this crisis as their exposure to toxic assets and the write-downs (relative to assets) so far exceed those of other banking sectors (Table 4.1). The savings banks were not directly exposed to toxic assets due to their regional domestic focus (but as owners of the *Landesbanken* are indirectly affected). From a theoretical point of view, public ownership is not necessarily

related to more risk taking, as profit maximization is not the primary concern. However, weaker banking skills and governance structures, unstable business models and political influence may well raise the fragility of publicly owned banks. The empirical evidence is inconclusive. Iannotta *et al.* (2007) find in a sample of European banks that public-sector banks exhibit poorer loan quality and higher insolvency risk than other banks. By contrast, Garcia Marco and Robles Fernandez (2008) find that Spanish commercial banks are less stable than Spanish savings banks and Beck *et al.* (2009) find for Germany that privately-owned banks are the least stable, followed by the savings banks and the co-operative banks (but their sample ends in 2007 and excludes the *Landesbanken*, the five largest private banks and two co-operative central institutions). The analysis by Hau and Thum (2009) points to governance problems in German banks in public ownership due to lack of skills. They find that the financial and managerial competence of supervisory board members is systematically lower in state-owned banks compared to private banks. In particular, their results suggest that bank performance during this crisis was directly correlated with supervisory board competence. This is in line with the observation that even before the crisis the *Landesbanken* were among the worst performing banking groups in Germany.[6]

... and the lack of a viable business model...

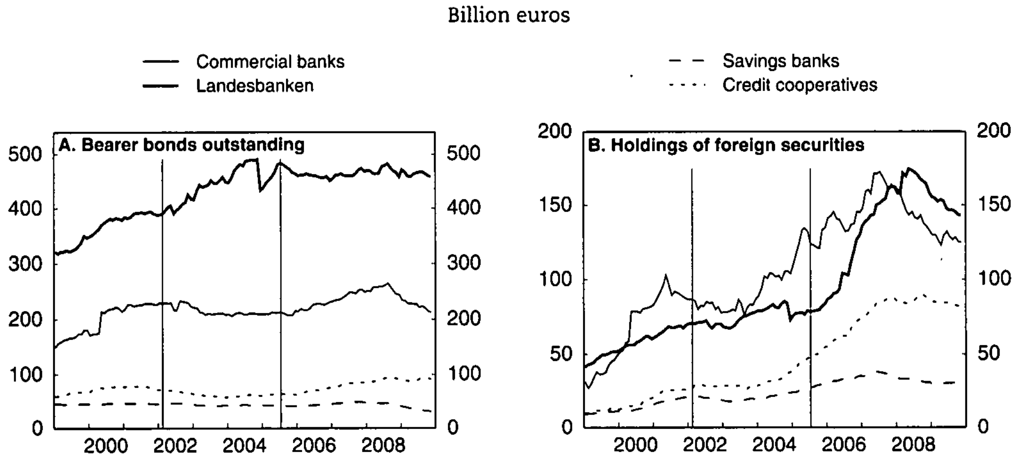
The key to the problem of some of the *Landesbanken* was the lack of a viable business model. Their role as main bank of the state and municipalities was reduced in recent years and their business of providing services for the savings banks, which was one of the main purposes for their creation, now accounts for only a small share of revenues. In addition, efforts by the *Landesbanken* to expand into retail banking or into lending to small businesses were hindered by the savings banks, which tried to protect their own business.[7] As an alternative they focussed on wholesale activities, increasing their investment banking business and international activities, and thus were in direct competition with private banks. Also, they were under pressure from their owners to achieve ambitious performance targets (Schrooten, 2009).

... helped by the long phasing-out period of government guarantees

However, a more direct factor for the large exposure of the *Landesbanken* to toxic assets is related to the long phasing-out period of government guarantees. This led them to build up excess liquidity available for lending to foreign banks or buying foreign securities, including complex securitization portfolios, and reduced the pressure to find a viable business model. In the period leading up to the phase-out of state guarantees for new liabilities in July 2005 (Box 4.2), these institutions increased the volume of their capital market refinancing sharply, accumulating large funding reserves, as refinancing costs would rise sharply once the state guarantees vanished (Figure 4.1, panel A). Between February 2002 and July 2005, the outstanding stock of bonds with government guarantee rose by around 25% while other bank's outstanding bonds fell. The *Landesbanken* used these funds to invest abroad with the amount of assets invested in foreign securities more than doubling in size between mid-2005 and mid-2008 (Figure 4.1, panel B). While private banks started reducing their holdings of foreign assets already in mid-2007, the *Landesbanken* increased their holdings until well into 2008. When the high-yielding structured credit products in their portfolios were downgraded, two *Landesbanken* were forced to merge immediately (SachsenLB and LBBW) and others had to be bailed out by various state governments (BayernLB, WestLB, HSH Nordbank).

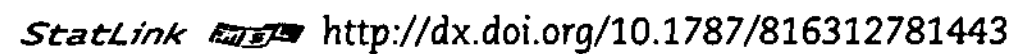
Figure 4.1. **Refinancing and investments across banking sectors in Germany**

Billion euros



Note: Credit co-operatives include regional institutions. The decline in bonds outstanding for the *Landesbanken* in December 2004 is primarily due to a reclassification. The vertical lines indicate the period during which state guarantees for new liabilities of the *Landesbanken* were phased out, February 2002 to July 2005.

Source: Bundesbank.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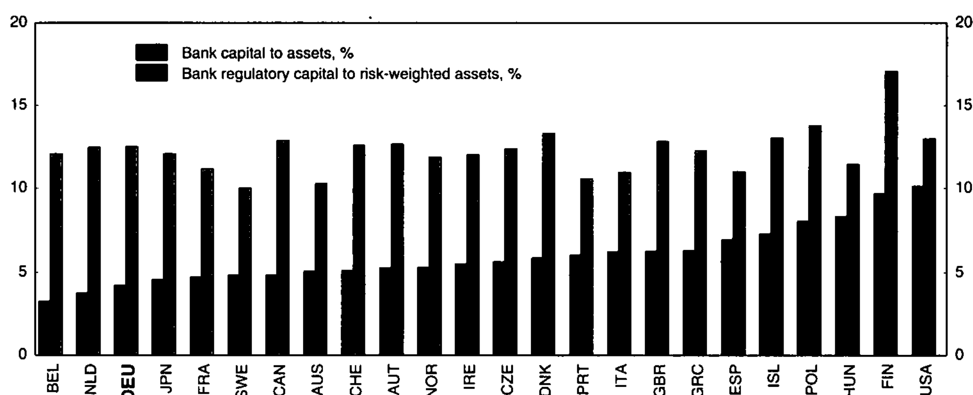
Overall, the evidence during the crisis underlines once more that the arguments for state-ownership of *Landesbanken* are weak. Notably, they simply compete with private banks and no longer fulfil a public service function. So far, larger reforms are envisaged for several *Landesbanken*, as the EU Commission (as a condition for their approval of state aid for the institution) is demanding significant adjustments (typically refocusing business models, significant reducing balance sheets and changing the bank's corporate governance and ownership structures). In the case of WestLB, the EU Commission expects a public tender procedure before the end of 2011.[8] While these reforms are a step in the right direction, they do not provide a sector-wide solution. Further privatization steps need to follow for the other *Landesbanken*. Significant consolidation among the *Landesbanken* should be fostered, in part to further dilute the influence of each state owner on the banks' business models, thereby improving governance structures. These fewer institutions may then be re-focussed on their traditional role as the central bank of the savings banks to the extent that there is a demand for such services (there is no need to have seven regional institutions performing this role).

German banks have a high leverage...

The vulnerability of the German banking system in the crisis was heightened by its higher leverage compared with other OECD countries. German banks stand out with an average capital-to-asset ratio of 4.2% over the period 2000-07, lower than in most other countries (Figure 4.2). However, the regulatory capital-to-risk-weighted asset ratio is higher, partly reflecting the favourable risk-weighting under current guidelines but also the more traditional business models with less risk exposure. In other words, German banks exhibit one of the highest absolute leverage ratios as they carry large volumes of assets to which they attach low risk. The gap between the risk-weighted regulatory capital ratio and the leverage ratio is very large compared with other OECD countries and particularly large for the big commercial banks, the *Landesbanken* and the mortgage banks (IMF, 2009). This may lead to under-pricing of credit risk and exposes German banks relatively more to unexpected shocks than banks in other countries. In fact, net provisioning (in % of total

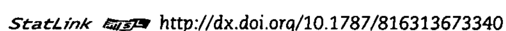
Figure 4.2. **Bank capital to asset ratios**

Average ratio, 2003-07



Note: Due to differences in national accounting, taxation and supervisory regimes, Financial Soundness Indicators (FSI) data are not strictly comparable across countries. Refer to the FSI website, *http://fsi.imf.org/* for details.

Source: IMF, *Global Financial Stability Report*, October 2009.


StatLink http://dx.doi.org/10.1787/816313673340

assets) is significantly higher than in other OECD countries, indicating that risk pricing may be inadequate. Notwithstanding the fact that in the post-war period Germany has not had a wide spread banking crisis, in contrast to many other countries, it is nevertheless more vulnerable to large shocks, such as the current crisis.

One way to prevent a significant discrepancy between regulatory capital to risk-weighted assets and the bank capital to (unweighted) assets is to introduce a cap on the overall leverage of banks' balance sheets in the form of a leverage ratio, as is currently discussed internationally. A leverage ratio helps to contain excessive leverage in the banking system and introduces additional safeguards against model risk and measurement error. While the recent decision by the government to require banks to notify a leverage ratio to the supervisors (Box 4.4) is welcome in order to prevent banks from becoming too leveraged, the authorities should consider making such an instrument binding. In order to prevent competitive disadvantages, differing accounting standards among countries need to be taken into account when assessing the level of the ratio as is intended in the recent consultative proposals to strengthen the resilience of the banking sector announced by the Basel Committee (BIS, 2009). Off-balance sheet assets also need to be taken into account when calculating the ratio.

Under-pricing of risk is most likely during boom periods and may also allow weak banks to expand their loan portfolio. This increases the vulnerability during a downturn when banks are forced to deleverage as risk ratings of their credit portfolio become less favourable, thus leading to pro-cyclicality. One approach to counter such behaviour is to require increased capital buffers in good times that can be drawn upon in periods of stress, akin to the Spanish approach of dynamic provisioning and to the proposal of the Basel Committee (BIS, 2009). According to this method, banks determine the provision for specific loan losses in their individual institution as well as a statistical provision, as determined through a collective assessment provided by the regulator and based on historical information on credit losses for homogenous groups of loans. Whenever the statistical provision exceeds the provision for specific loan losses, banks have to raise their

provisioning by the difference (and *vice versa*), thereby building a buffer in lending booms to be used in recessions. The authorities should consider applying this tool to German banks.

... and structurally low profitability

German banks also compare poorly with other countries in terms of profitability. In some cases, this may have resulted in excessive risk taking. The pre-tax return on assets (ROA) was around ¼ per cent on average over the period 2000-07, the lowest return by some margin among those countries available in the OECD *Bank Profitability Database* (unweighted average: 0.9%, Table 4.3). Across sectors, profitability is somewhat higher for savings and co-operative banks but in absolute terms it also remains well below those of other countries.[9] This indicates that low profitability is not directly related to the specific structure of the banking system, notably the high share of banks without a strict profit-maximization goal. However, the *Landesbanken* stand out as having very poor profitability compared with the other banking groups. Reforming them as outlined before may thus also help in raising the overall profitability of the banking sector.

Table 4.3. **Performance indicators of the German banking system**

As % of total assets, average 2000-07

	Capital and reserves	Income pre-tax	Net interest income	Non-interest income	Operating expenses
Austria	5.23	0.54	1.09	1.20	1.52
Belgium	3.60	0.53	0.89	0.76	1.02
Canada	5.50	1.03	1.92	1.92	2.54
Czech Republic	8.80	1.23	2.27	7.68	
Denmark	6.03	1.06	1.52	1.22	1.42
Finland	9.30	1.30	1.52	1.26	1.31
France	4.48	0.57	0.73	1.28	1.29
Germany	**4.20**	**0.26**	**1.34**	**0.62**	**1.32**
Ireland	5.15	0.81	1.22	0.71	0.97
Italy	7.01	0.91	2.15	1.05	1.87
Korea	4.79	0.76	2.79	0.44	1.40
Luxembourg	3.90	0.56	0.64	0.61	0.52
Netherlands	3.59	0.60	1.33	1.10	1.65
New Zealand	6.70	1.57	2.19	1.10	1.55
Norway	6.05	0.99	2.00	0.76	1.61
Poland	9.28	1.47	3.42	2.63	3.76
Slovak Republic	6.61	1.22	2.68	1.61	3.50
Spain	7.94	0.86	1.98	0.95	1.56
Sweden	5.75	1.05	1.11	1.40	1.55
Switzerland	5.47	0.71	1.06	1.57	1.55
United States	9.58	1.65	3.12	2.13	3.12
Unweighted average	***6.14***	***0.94***	***1.76***	***1.52***	***1.75***

Source: OECD, *Bank Profitability Database.*

Comparing the income statements of banks across countries it becomes evident that the low profitability of German institutions is mainly due to lower income. Operating expenses as a share of assets, by contrast, are significantly below the (unweighted) OECD average.[10] On the revenue side, German banks lag behind due to lower non-interest income, while net interest income compares somewhat more favourably. Apparently, German banks were less able than banks in other countries to compensate for the decline

in net interest income that occurred across countries as a result of deregulation and competition from non-bank sources. This problem is more pronounced for the private banks, which tend to have much lower net interest margins than the savings or co-operative sector (which in case of the savings banks may reflect not least cheaper refinancing due to their implicit government backing).

The fact that weak profitability is due to the income side suggests that a high degree of competition drives down margins. Indeed, there is some evidence for this view, even though competition is hard to measure (Box 4.3). High competition would be beneficial for consumers and thus a positive feature. However, it may also help to explain why German banks were investing abroad in search for higher returns, even though the empirical

Box 4.3. **Measuring the extent of competition in the German banking system**

At first sight the German banking system seems to exhibit a high degree of competition with around 2 000 banking institutions (roughly 1.5 times the OECD average). The ratio of population to the number of institutions is one-fourth of the OECD average. This interpretation of a fragmented and competitive banking sector becomes obvious when looking at concentration ratios: The assets of the five largest banks as a share of the total assets of all credit institutions amounts to 22% in 2007, the lowest value in the EU27. Similarly, the Herfindahl-Index (which equals the sum of the squares of all the credit institutions' individual market shares in terms of total assets) is the lowest by a wide margin in the EU27 (ECB, 2008). Apparently, the market power of single institutions, based on these measures, is very small.

However, these measures treat all banks as individual institutions that compete against each other, neglecting the structure of the banking system and overstating competition. In particular, retail banking markets are local in nature, thus the geographic reach of every institution matters. The largest number of credit institutions belongs to the savings and co-operative banks which operate under the regional principle. Thus, most of them conduct their business in narrowly defined regional markets and within-group competition is of only minor importance. If the individual savings and co-operative banks were instead treated as members of their two institutions, concentration would be higher and competition lower (and more in line with other European countries).

To circumvent these problems microeconomic studies analyse directly the behaviour of individual banks in terms of price-setting. Indicators include the H-statistic, which measures the revenue elasticity with respect to a change in costs. Studies using this approach usually find that the extent of competition in Germany is within the average of other countries. Similar results are found for the Lerner-Index and the Boone-Indicator (see studies cited in Sachverständigenrat, 2008). Net interest margins (defined as net interest income as % of total assets as in Table 4.3) are lower than the OECD average but do not point to a particularly high degree of competition.

Studies that focus on the German banking sector suggest that competition is largest for private commercial banks and *Landesbanken*, while savings banks and credit co-operatives are operating under less intensive competition (even though results need to be interpreted with caution as they depend on the methodology used; Fiorentino and Herrmann, 2009). This indicates that the latter are operating in sheltered local markets where they have more market power. This view is supported by net interest margins, which are very high for the savings and co-operative banks, while the margins earned by private commercial banks are lower.

evidence for the link between banking competition and risky behaviour is weak (Allen and Gale, 2004; Boyd *et al.*, 2006). However, low profitability seems only partly explained by competition factors. Brunner *et al.* (2004) find that less adequate pricing of risk (high provisioning) and a lower proportion of high-value-added activities/output (low revenue from sources other than interest margins) play a role.

Opening up the savings bank sector should be considered

The current reform initiative should be used for further improvements of the German banking system that may help increase its efficiency. Reforming the unprofitable *Landesbanken*, as recommended above, would certainly go some way towards achieving this. However, while the savings and co-operative banks have been a source of stability during the crisis, the banking system nevertheless remains highly fragmented. In this regard, legal restrictions on mergers across bank types, notably regarding the takeover of savings banks by private institutions, may limit synergies. One indication that consolidation may not have gone far enough is that the number of credit institutions relative to population is still around 40% higher than in other euro area countries.[11] Consolidation has so far taken place predominantly through mergers and takeovers of mostly smaller banks within one pillar of the banking system. Evidence suggests that these takeovers often do not lead to improvements in efficiency (Bundesbank, 2006). For example, a major objective of takeovers taking place in the savings bank and co-operative bank sectors is to rectify problem cases.[12] This may be one reason why profitability remains low despite significant merger activity in recent years (the number of credit institutions fell by almost half since 1995, against around one-third in the euro area).

While cross-pillar consolidation remains a controversial issue in Germany, other European countries are more advanced in restructuring their public banking sector. In Austria, savings banks were allowed to transform into joint stock companies and the regional principle was abolished. In France, savings banks were turned into co-operatives owned by local savings societies (that sell shares to employees and public entities), allowing for some (limited) private participation. In Italy, the savings bank sector has been privatized, with foundations playing a large role as owners. In Spain, very limited private sector participation (no voting rights) was allowed (even though public sector involvement remains high) and the regional principle was abolished. In Sweden, savings banks were transformed into joint stock companies in the early 1990s, consolidated into one entity and later privatized (see Brunner *et al.*, 2004; Deutsche Bank Research, 2004; Sachverständigenrat, 2008; Ayadi *et al.*, 2009). These reforms are generally thought to have led to consolidation and an improvement in profitability in the concerned countries. Consideration should thus be given to open up the German savings bank sector to private ownership. This would help to ensure a level playing field between public sector and private financial institutions. Even though profitability of the savings banks is better than that of private banks, the current setup of the savings bank sector may have adverse implications for the profitability of other banking groups. In addition, reducing public ownership also lowers the risk of potential political influence on business operations. One possibility along this line is the proposal by the Sachverständigenrat (2008) to turn the savings banks into joint stock companies owned by foundations, akin to the reforms in Italy. This would reduce political influence on the operating business by increasing transparency and open up the possibility of selling shares to institutions outside of the

savings bank pillar, thus reducing the fragmentation in the banking system and opening the way for a market-oriented restructuring.[13]

The crisis revealed problems in banking regulation and supervision

The crisis has revealed a number of weaknesses in the regulatory and supervisory framework, both in Germany and internationally. While the German approach in these areas takes place within a framework of European regulations (OECD, 2009b) and international practices, there is substantial national discretion to impose regulations and the way supervision is applied is largely a national matter. The European and international regulatory contexts may change substantially as a consequence of the financial crisis, but there is nevertheless important scope for Germany to strengthen its own arrangements.

Banking supervision can be organized more efficiently

Currently, supervision is shared between the Bundesbank and the German Financial Supervisory Authority (*Bundesanstalt für die Finanzdienstleistungsaufsicht;* BaFin). The BaFin is an integrated supervisor created in 2002 when the Federal Banking Supervisory Office, the Federal Supervisory Office for Insurance Enterprises and the Federal Supervisory Office for Securities Trading were merged into one entity. According to a directive in 2008 (*Aufsichtsrichtlinie*), which clarified the distribution of tasks, the Bundesbank is responsible for most of the operational tasks in banking supervision. In the ongoing monitoring process, the Bundesbank's responsibilities include evaluating the documents, reports, annual accounts and auditors' reports submitted by the institutions as well as regular audits of banking operations. It holds both routine and *ad hoc* prudential discussions with the institutions. The key output of the monitoring process is a prudential risk profile, which is produced at least yearly for each banking institution and includes a detailed assessment of the risks of the institution as well as other factors such as its profitability, organization, ownership structure and internal processes.

The final assessment and decision-making power on all supervisory measures rests with the BaFin. The prudential risk profile prepared by the Bundesbank provides the main basis for the supervisory judgment. Only in exceptional cases does the BaFin carry out audits of banking operations, either together with the Bundesbank or on its own. While the BaFin is a functionally and organisationally independent body, it is subject to legal and technical oversight of the Ministry of Finance. The ministry can in principle issue instructions to the BaFin on a range of organizational and other matters and is the "supreme official authority" for the BaFin management (IMF, 2003). BaFin is funded by the supervised institutions and around half of the members of the administrative council come from the industry. To facilitate the co-operation between the Bundesbank and the BaFin, the *Forum for Financial Market Supervision (Forum für Finanzmarktaufsicht)* has been created.

Despite the recent efforts to improve the co-ordination between both institutions, the current fragmented setup of supervision may be a problem as analysis is done in one institution while execution is done in the other. In this regard, the plan by the new coalition government to concentrate banking supervision at the Bundesbank moves in the right direction since it concentrates the decision-making powers and the underlying analytical work in one institution. In order to raise the efficiency of supervision, it also needs to be ensured that the supervisory institutions have adequate human resources. This relates less to the headcount (Germany has fewer personnel in relation to the number

of banks than France or Spain, but more in relation to the banking assets) than to their qualification. Human capital available for supervision should be strengthened by offering more flexible pay structures but also by offering a research environment that will be attractive to more qualified personnel.

The independence of the supervisor needs to be strengthened

Early warning signs of the crisis were missed due to a lack of more prospective supervision including more scrutiny in the analysis of the viability of business models. For example, the risks associated with the lack of a viable business model for the *Landesbanken* in connection with the build-up of large liquidity stocks during the phase-out of government guarantees should have rung alarm bells. Even though the prudential risk profiles include an analysis of business plans, they were often not assessed critically enough. Supervisors did not see it as their role to interfere with business strategies as long as supervisory rules were not breached. In addition, interference with the business models of some state-owned banks may have been delicate for BaFin as it is working under the legal and technical oversight of the Ministry of Finance, which itself has representatives on the supervisory boards of the supervised banks. According to Quintyn *et al.* (2007), banking supervision in Germany is among the least independent in a sample of 32 industrial and emerging countries (although the score for accountability is the highest in the sample).

Going forward, the supervisor should be sufficiently independent from political interference (Rochet, 2008). Concentrating supervision at the Bundesbank may help in this regard. A further step in this direction could be setting up an independent commission outside the BaFin, Bundesbank or Ministry of Finance to write regular reports on financial supervision (similar to the Council of Economic Experts or the Monopoly Commission and mirroring the intended European Systemic Risk Board) as suggested by Hartmann-Wendels *et al.* (2009).

Widening the scope for supervision beyond compliance with quantitative requirements

Although banks adhere to quantitative regulations, they also engage heavily in regulatory arbitrage. This concerns for example the issue of granting liquidity lines to special purpose vehicles (SPV), which invested in structured credit products while being refinanced on the money market. One way to circumvent the mandatory reporting of large credits to the Bundesbank was to split the SPVs up into several independent asset companies, under a financial holding company, in order to keep the size of the individual credit lines sufficiently small.[14] In the case of the Industriekreditbank IKB, the sum of the liquidity lines was reportedly too large to satisfy the large exposure criterion of the banking act. Also, the limitation of the duration of liquidity lines to 364 days in order to circumvent reporting is an example of regulatory arbitrage.[15] Overall, banking supervision was arguably too much oriented at quantitative regulations and put too little focus on qualitative regulations that would also allow for some discretionary leeway for supervisors. Qualitative regulations are also more forward-looking as supervisors do not have to wait for quantitative targets not to be met. However, there is also a downside of going too far towards more discretionary leeway if supervisors use increased flexibility to implement "light-touch regulation". In practice, thus, a fine balance between qualitative and quantitative supervision needs to be struck. Going forward, the scope for supervision beyond compliance with quantitative requirements may need to be widened in Germany, giving banking regulators more leeway and moving towards a more principle-based

regulatory framework with more qualitative assessments (while maintaining the rules). This would include supervisors addressing more clearly the risks entailed by certain business strategies.

Putting more focus on macro-prudential analysis

Finally, systemic risks were not taken into account to a sufficient extent as banking supervision – as in other countries – focused on micro-prudential analysis. This concerns, for example, the risks from a maturity mismatch in the refinancing of long-term loans, which was the key issue in the fall of Hypo Real Estate. As the money markets dried up in the wake of the fall of Lehman Brothers and market participants became highly risk-averse, short-term refinancing was not available. However, adequately capturing systemic risks necessarily involves activities that go beyond national borders. One step forward would be the publication of systemic risk indicators. The centralisation of supervision at the Bundesbank is in line with this necessity as it has natural advantages in the field of macro-prudential analysis, for example by publishing *Financial Stability Reports*.

Responding to the apparent weaknesses, the government enacted a law to strengthen banking supervision in July 2009 (Box 4.4). The overall intend to strengthen the supervisory powers and to allow for more preventive measures, such as a discretionary requirement for higher capital ratios, is highly welcome. However, more wide-ranging steps could have been taken, for example by setting a mandatory leverage ratio instead of merely requiring its reporting to the supervisor. The requirement of higher capital buffers in a benign economic

Box 4.4. **Government initiatives to strengthen banking supervision**

The core changes concerning banking supervision that are put in place by the Act on the Strengthening of Financial Market and Insurance Supervision (*Gesetz zur Stärkung der Finanzmarkt- und Versicherungsaufsicht*) implemented in July 2009 are the following:

- The BaFin may require higher capital ratios, for instance if it considers a bank's risk absorption capacity to be inadequate; this also allows the supervisor to require higher capital buffers in a benign economic environment. Higher capital ratios can also be required in case a bank does not have a proper business organization. In addition, the BaFin may also require higher liquidity ratios.
- Banks will have to report their leverage ratio (ratio of capitalization to total unweighted assets, including off-balance sheet assets and the settlement value (*Wiedereindeckungswert*) of derivatives).
- Dividend payout and coupon payments on hybrid instruments that exceed the annual net profit may be prohibited in case the supervisor considers that there is a danger of breaching minimum capital requirements (before this was only possible after the breaching).
- During crisis times, the BaFin may order a prohibition of payments by a domestic lender to a foreign parent-company (so-called ring fencing) to prevent the absorption of liquidity.
- The BaFin is entrusted with the authority to remove members from supervisory board at banks and insurance companies in case of incompetence or lack of reliability (conscientiousness). The *Banking Act* also regulates that supervisory board members are allowed to have at most five mandates in banking institutions and not more than two prior management members may be on the supervisory board.

environment could be broadened so as to apply beyond the individual institution (Krahnen, 2009), for example following the example of dynamic provisioning as practiced in Spain (see above). Also, requiring higher capital ratios for banks without a proper business organization may not be sufficient to enforce sufficient change in such an institution.

Introducing a framework for restructuring and winding-up systemically-relevant banks

The government's initial use of *ad hoc* measures to bail out individual banks showed that the current mechanisms to handle banking crisis did not provide sufficient scope for an appropriate response to systemically relevant banks in distress. As in most other countries, there is thus the need for a new restructuring and winding-up regime. Ideally, such a scheme allows the negative system-wide effects of an individual bank failure to be limited, while keeping the costs for the taxpayer to a minimum and avoiding incentive distortions as best as possible. A critical element of such a framework should be that the state intervention takes place at a sufficiently early stage, so as to allow for preventive measures long before a potential bankruptcy.[16] A framework along these lines has recently been proposed by the Council of Economic Experts (Sachverständigenrat, 2009). Within the government, various draft laws have been put forward by the Ministry of Justice and the Ministry of Economics. The government should act quickly to put in place an efficient regime, not only to prepare for the next eventual large banking crisis but also to be prepared if individual institutions encounter difficulties during the remainder of the current crisis.

Box 4.5. **Recommendations regarding the banking sector**

Ensure that banks are adequately capitalized

- Continue efforts to clean bad assets from banks' balance sheets and ensure that banks are adequately capitalized. The authorities should play an active role, by closely monitoring capital adequacy, notably including the application of stress tests, and maintaining support instruments in order to, if needed and as a last resort, provide public capital to those banks that are not able to raise funds from private sources.

Reforming the *Landesbanken* and raising the efficiency of the banking system

- Restructure the *Landesbanken*; options include privatization, consolidation into one entity and focusing on core activities. Make sure they have a viable business model.
- Ensure a level playing field between the savings banks and privately owned banks, *e.g.* by opening up the savings bank sector for private ownership as in other European countries.

Banking regulation and supervision

- Centralize supervision at the Bundesbank as planned but ensure that this leaves the institution with sufficient independence from the Ministry of Finance. Strengthen the macro-prudential elements of supervision.
- Widen the scope for supervision beyond compliance with quantitative requirements. Prevent regulatory arbitrage by continuing to move closer towards a more principle-based regulation. Supervisors should address more clearly than in the past the risks that certain business strategies entail.
- Consider introducing dynamic provisioning as well as a binding overall leverage ratio.
- Introduce a framework for restructuring and winding-up framework systemically-relevant banks that allows for a sufficiently early intervention by the government.

Notes

1. See speech by Finance Minister Steinbrück "Die Rolle des Staates in der Sozialen Marktwirtschaft" on 9 July 2009 in Frankfurt/Main.
2. These estimates are based on a comparison between nominal values and book values of securitized assets on the balance sheets of large German banks and their market price development since January 2007.
3. The data are total committed amounts including capital injections, liability guarantees and asset support.
4. Until October 2009, SOFFIN provided EUR 127.7 billion of guarantees, EUR 21.9 billion in capital injections and took over EUR 5.9 billion of assets (Sachverständigenrat, 2009).
5. Data refer to 2005 and are taken from the Worldbank Financial Regulation Database. Public ownership of the banking system has increased significantly during the financial crisis in several OECD countries due to rescue operations.
6. The average pre-tax return on equity over the period 2000-07 was 4% for the *Landesbanken* and the central institutions of the credit co-operatives, almost 10% for the savings banks and credit co-operatives and 7½ per cent for the private banks.
7. In those *Landesbanken* which were more closely integrated with the savings banks (such as Helaba), exposure to toxic assets and losses during the crisis tended to be less severe (Dawson-Kropf and Rioual, 2009).
8. See European Commission (2009), State aid: Commission approves aid package for German bank WestLB (Press release IP/09/741, 12 May 2009). The EU Commission demanded smaller reforms for Landesbank Baden-Württemberg (LBBW): the institute will have to be transformed into a joint stock corporation but the ownership structure may be maintained, even though the political impact on its business is to be reduced by installing an independent expert as the head of the supervisory board (Press release IP/09/1927, 15 December 2009). Further state aid cases for other *Landesbanken* are still under consideration.
9. The average ROA over the period 2000-07 was 0.2% for commercial banks, 0.4% for savings banks, 0.5% for co-operative banks and 0.1% for other miscellaneous banks. Regression analysis indicates that the lower profitability also seems unrelated to the economic cycle (Brunner *et al.*, 2004).
10. However, analysis on a disaggregated basis finds that the cost-income ratio of the median German bank is high compared with other countries (Sachverständigenrat, 2008).
11. In 2007, the ratio of credit institutions per 100 000 inhabitants was 2.46 in Germany, compared to 1.73 for the euro area excluding Germany.
12. Acquired banks in these sectors are predominantly characterised by a low level of capitalisation, increased credit risk and comparatively low efficiency (Bundesbank, 2006).
13. In the proposal by the Sachverständigenrat, outside shareholders would be limited to minority holdings in order to maintain the public mandate to supply banking services locally and to maintain the advantage of being in the savings bank network.
14. Pursuant to sections 13 to 14 of the Banking Act, institutions have to report their large exposures and loans of EUR 1.5 million or more to the Bundesbank on a quarterly basis. The key provision is the limitation of a single large exposure to 25% of the liable capital for the banking book and 25% of the own funds for the overall business of trading-book institutions. Large exposures are defined as exposures to an individual borrower or a single borrower unit which amount to or exceed at least 10% of the liable capital or own funds. Loans of EUR 1.5 million or more to an individual borrower or a single borrower unit have to be reported to the Bundesbank. Its credit register collates all such reports, computes the total indebtedness of an individual borrower or a single borrower unit and then notifies the reporting institutions of that total amount of indebtedness of their borrowers.
15. Until the end of 2007 exposure to such off-balance sheet vehicles (SPVs) did not have to be backed by capital. Specifically, liquidity lines granted to the SPV only had to be backed by capital if they could not be terminated without notice and unconditionally and had an original maturity of more than a year. In practice, credit lines were typically granted with a maturity of 364 days so that they did not have to be included in the capital charge. Such a zero weighting for short-term credit lines has been largely abolished with the introduction of Basle II in January 2008 (see Bundesbank, 2007, Box 1.6).
16. The thresholds for intervention should usefully consist of quantitative targets (the bank undershoots certain ratios), as done in the prompt corrective action framework if the US FDIC, but also allow for a sufficient qualitative assessment based on principles, as is the case in the UK's Banking Act (Bundesbank, 2009).

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