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Bank Failures in Mature Economies

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Introduction

Many highly developed economies that have sophisticated markets and long functioning banking systems have had significant bank failures or banking crises during the past 30 years. Central bankers fear widespread bank failures because they exacerbate cyclical recessions and may trigger a financial crisis. It is not surprising that these failure episodes have resulted in numerous legal and regulatory changes in the affected countries that were designed to decrease the probability of future bank failures and lessen the cost of the bank failures. Bank capital is meant to be a buffer during periods of economic instability and increasing capital levels or making capital more sensitive to the risks in banks should help stabilise the banking system, decreasing the incidence and cost of bank failures.

A number of recent official working groups and academic studies have analysed the causes and policy responses to bank failure across countries.[1] The Groupe de Contact (1999) examined the causes of banking difficulties in the EEA since the late-1980s.[2] Evidence was based on (117) individual bank problems in 17 countries and national country reports from a few countries (France, the UK and the Scandinavian countries). The majority of banking difficulties were manifest as credit problems and sometimes as operational risk. Market risk was rarely a significant problem. Management and control weaknesses were significant contributory factors in nearly all cases. However, 90% of the banks reported capital ratios about the regulatory requirement when difficulties emerged.[3] The internal report of the Groupe de Contact concluded that this suggested loss provisioning did not accurately reflected asset impairment and thus capital ratios were overstated. And more generally, even where asset impairment had been properly measured, such quantitative measures might not capture qualitative problems, such as poor management.

The key role played by poor management in crises has also been highlighted by various academic studies. In a sample of 24 systemic banking crises in emerging-market and developed countries, Dziobek and Pazarbasioglu (1997) found that deficient bank management and controls (in conjunction with other factors) were responsible in all cases. In a study of 29 bank insolvencies, Caprio and Klingebiel (1996) found that a combination of macroeconomic and microeconomic factors was usually responsible. In particular, on the macroeconomic side, recession and terms of trade were found important. Also, on the microeconomic side, poor supervision and regulation and deficient bank management were often significant.

On banking crisis resolution, the OECD (2002) recently compared (based on questionnaire response) the techniques and practices used in member countries. In addressing problems, typically the central bank or government agency stepped in fairly early to supply liquidity which in most cases helped to avert a panic by investors. Most governments protected depositors, in whole or part, up to the statutory minimum. Liquidations were used just occasionally and typically only for smaller institutions or where only a small part of the banking system was impaired. When large commercial banks have been in trouble, problems

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[1] A recent paper by the Basel Committee (BIS (2002)) has also set out guidelines for dealing with weak banks, including early indication of problems and alternative resolution measures.

[2] 'Difficulties' covered a wide range of events including bankruptcy, payment default, forced merger, capital injection, temporary state support, significant falls in overall profits or profits in particular areas of business.

[3] The capital ratio in 90% of cases was above the requirement imposed by the supervisor.

have been resolved usually through mergers and some mix of capital injection and increased government control.

In a major study of the U.S. banking crisis in the 1980's and early 1990's, the FDIC (1997) analysed the causes of the crisis, the regulatory responses to the crisis and the lessons that could be learned. Five of the lessons identified in that study which may be relevant are: First, bank regulation can limit the scope and cost of bank failures but is unlikely to prevent failures that have systemic causes. Second, for most of the period studied, there were no risk-based capital requirements and therefore there was little ability to curb excessive risk taking in well-capitalised, healthy banks. Third, problem banks must be identified at an early stage if deterioration in the bank's condition is to be prevented. In the U.S. system, this required frequent, periodic bank examinations. Fourth, the presence of deposit insurance helped maintain a high degree of financial stability throughout the crisis, but not without costs. The direct costs of the banking crisis were born by the industry. However, Curry and Shibut (2000) calculate that the Savings and Loan crisis during the same time period cost the U.S. taxpayers $123.8 billion, 2.1% of 1990 GDP. Costs included those associated with moral hazard risk associated with deposit insurance. Chief among these was the funnelling of vast sums of money into high-risk commercial real estate lending. In addition to moral hazard, this lending was also encouraged by ill-conceived deregulation and disruptive tax law changes. Finally, resolving bank failures promptly by closing (or merging) banks when they fail and an insolvency rule returning the bank and/or its assets to the private sector as expeditiously as possible help to maintain market discipline for banks and to promote stability in the market for bank assets.

In their sample of 24 systemic banking crises, Dziobek and Pazarbasioglu (1997) analysed the success of crisis resolution policies and which type of responses were most optimal. They found that resolution measures were more successful in improving the banking system's balance sheet (stock) positions than their profit (flow) performance. Balance sheets could more easily be improved through an injection of equity or swapping bonds for bad loans. But improving profits was more difficult and took longer because it requires operational restructuring. The most progress in restoring the banking system's financial strength and its intermediation role occurred when (i) countries addressed crises earliest, (ii) lender of last resort was strictly limited, (iii) firm exit policies were used, and (iv) owners and managers were given the right incentives.

This paper studies bank failures in eight countries: Germany, Japan, Norway, Spain, Sweden, Switzerland, the United Kingdom and the U.S. It examines the reasons for the failures, how the failures were resolved, and what regulatory changes followed from the crisis. A good understanding of the reasons behind bank failures is crucial in developing a regulatory system that reduces the risk of future failures. While the paper focuses on why the banks failed, the other two issues provide interesting additional evidence. The way a crisis is resolved may have been anticipated by market participants and may thus have had an impact on the probability and severity of the crisis. The regulatory changes following a crisis are an indicator of what national authorities perceived as the underlying causes of the problems. The study is intended to be complimentary to other studies. For example, OECD (2002) examined strategies for resolution of failure in a number of countries - whereas this study will mention how the crisis was resolved but will analyse in detail the underlying causes of failure and also examine changes in the legal and regulatory regimes that resulted from the crisis. The study will also help shed light on the frequency of failure by risk type, the type of shock that precipitated the crisis, and the impact of the event.

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The Herstatt crisis in Germany

Summary

The following section focuses on the bank failure of Herstatt in Germany, which has received much attention in international finance because of its regulatory implications. Herstatt was closed by its regulators in 1974. The bank was insolvent and left the dollars owed on its foreign-exchange deals unpaid. Except for the Herstatt failure, the bank failures in Germany were mostly idiosyncratic in character and so did not pose significant risk for the whole financial system. The banking industry always managed to resolve the bank failures without any state interference. Moreover, with efficient handling by the supervisors, they were quickly resolved.

Banking industry characteristics

The German banking system comprises some 2,500 credit institutions (as at end-2002) and is structured along three different pillars. With respect to ownership structure and objectives, it is possible to distinguish between public sector banks, cooperatives and commercial banks. However, differences in business behaviour are rather limited. **Public sector banks** include savings banks and their head institutions 'the Landesbanken'. Albeit legally independent entities, public sector banks co-operate closely within the so-called Sparkassen-Finanzgruppe. The regional associations of savings banks run institutional protection schemes which avoid the collapse of single savings banks. Membership in an institutional protection scheme is also a common feature of the **cooperative banks**. Governed by private law these institutions are primarily focused on SME and retail business in their respective regions. **Commercial banks** include the 'big four' banks and a number of smaller private banks. Like cooperatives, they do not benefit from state guarantees. They are organised in the Association of German Banks (BdB), which runs a depositor protection scheme covering a high proportion of depositors' money.

The relatively low profitability of the German banking sector in recent years and the phasing-out of state guarantees from 2005 on, has underlined the importance of structural changes in the German banking system. Further consolidation is expected in the public and cooperative bank sectors, in particular.

By international standards, the banking system in Germany has always been characterised by a high degree of stability. However, the German banking system has not been spared entirely from banking crises. Examples of crises in Germany include the large-scale banking crisis of 1931, the collapse of Herstatt in 1974 and the default of Schroeder, Muenchmeyer, Hengst & Co in 1983.[4] This study focuses on the Herstatt failure, which is famous in international finance.

[4] Bonn (1999).

The case of Herstatt

The case of Herstatt was the largest and the most spectacular failure in German banking history since 1945.[5] Herstatt was founded in Cologne in 1956 by Iwan Herstatt. At the end of 1973, Herstatt's total assets amounted to DM 2.07 billion and the bank was the thirty-fifth largest in Germany.

Description of the crisis

Herstatt got into trouble because of its large and risky foreign exchange business. In September 1973, Herstatt became over-indebted as the bank suffered losses four times higher than the size of its own capital. The losses resulted from an unanticipated appreciation of the dollar. For some time, Herstatt had speculated on a depreciation of the dollar. Only late in 1973 did the foreign exchange department change its strategy. The strategy of the bank to speculate on the appreciation of the dollar worked until mid-January 1974, but then the direction of the dollar movement changed again. The mistrust of other banks aggravated Herstatt's problems.

In March 1974, a special audit authorised by the Federal Banking Supervisory Office (BAKred) discovered that Herstatt's open exchange positions amounted to DM 2 billion, eighty times the bank's limit of DM 25 million. The foreign exchange risk was thus three times as large as the amount of its capital (Blei, 1984). The special audit prompted the management of the bank to close its open foreign exchange positions.

When the severity of the situation became obvious, the failure of the bank could not be avoided. In June 1974, Herstatt's losses on its foreign exchange operations amounted to DM 470 million. On 26 June 1974, BAKred withdrew Herstatt's licence to conduct banking activities. It became obvious that the bank's assets, amounting to DM 1 billion, were more than offset by its DM 2.2 billion liabilities.

Causes of the crisis

The Herstatt crisis took place shortly after the collapse of the Bretton Woods System in 1973. The bank had a high concentration of activities in the area of foreign trade payments. Under the Bretton Woods System, where exchange rates were fixed, this area of business tended to carry little risk. In an environment of floating exchange rates, this area of business was fraught with much higher risks.[6]

How was risk manifest in the crisis?

The cause of Herstatt's failure was its speculation on the foreign exchange markets. After the collapse of the Bretton Woods System in March 1973, the free floating of currencies provided

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[5] The Herstatt crisis is well known in international finance because of 'Herstatt risk'. Herstatt risk refers to risk arising from the time delivery lag between two currencies. Since Herstatt was declared bankrupt at the end of the business day, many banks still had foreign exchange contracts with Herstatt for settlement on that date. Many of those banks were experiencing significant losses. Hence, Herstatt risk represented operational risk for those banks which were exposed to the default of Herstatt. But, Herstatt risk was not a reason for the Herstatt crisis.

[6] (Kaserer, 2000).

Herstatt with additional incentives for risky bets on foreign exchange. In the end, its forecasts concerning the dollar proved to be wrong. Additionally, open positions exceeded considerably the DM 25 million limit. The management of the bank significantly underestimated the risks that free-floating currencies carried.

How was the problem resolved?

The three big German banks failed to organise a joint rescue. The reason for the failure of the rescue plan was the lack of transparency about the magnitude of actual losses. In June 1974, the loss from Herstatt's foreign exchange operations amounted to DM 470 million. Within ten days, the Federal Banking Supervisory Office (BAKred) withdrew Herstatt's banking licence.

What were the regulatory responses?

The Herstatt crisis had many implications for the regulatory framework. In 1974, shortly after the crisis, Principle Ia was introduced in order to limit the risk accumulated by a bank on its foreign exchange operations. In 1976, the Second Amendment to the Banking Act (KWG) came into force, which strictly limited risks in credit business and tightened the controls of the Federal Banking Supervisory Office (BAKred). Among other things, the risks in credit business were limited through such important measures as the regulation of large credits and the introduction of the principle of dual control. Furthermore, the Association of German Banks (BdB) decided to set up a deposit protection scheme for German banks.

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The Japanese Financial Crisis during the 1990s

Summary

Up to March 2002, 180 deposit-taking institutions were dissolved under the deposit insurance system in Japan. The total amount spent dealing with the problem of non-performing loans (NPLs) from April 1992 to September 2001 was Y102 trillion (20% of GDP). This section describes the financial crisis management in the 1990's, dividing the period into five broad stages.

The early stage, before mid-1994

From the post-war period until 1994, Japan experienced no major bank failures. Under the so-called "convoy system", banking supervision and regulation was conducted in such a way as not to undermine the viability of the weakest banks.

Financial deregulation in Japan started in the early 1970s, though measures were implemented on a step-by-step basis. Meanwhile, the deposit insurance system was first established in 1971. In 1986, in line with the financial deregulation, the Deposit Insurance Law was revised. Under the legislation, the Deposit Insurance Corporation (DIC) was provided with two policy options. One was a "payoff" (or refund on deposit) in which a failed bank would be closed down and a depositor would be protected up to Y10 million per depositor. The other option was called 'financial assistance' in which the DIC's funds were transferred to the rescue bank upon assuming the businesses from the failed bank, thereby protecting depositors and other creditors of the failed bank.

Although stock prices had been declining since the beginning of 1990, there was general optimism that once the aftermath of the bubble economy had been cleaned up, the economy would return to a period of more balanced and sustained growth. Larger banks were generally perceived to be protected in the convoy system. As a result, the DIC kept a relatively low profile with a modest office and a few staff. It was rare for the DIC to be actually called out.

The beginning of the crisis, mid-1994 to 1996

In December 1994, two urban credit cooperatives, Tokyo Kyowa and Anzen, failed. They were both ill-managed institutions. In the absence of a comprehensive safety net, the resolution package had to be almost hand-made. It was agreed that a payoff should be avoided, as the authorities could not neglect its potential for triggering a systemic disruption under the economic and financial climate at that time. Therefore, the alternative option of protecting all depositors using financial assistance from the DIC was judged appropriate.

However, there were a number of obstacles. First, there was no financial institution willing to assume the assets and deposits of the failed credit cooperatives. Second, there was also a legal limit to what the DIC could offer in a single case of financial assistance (the "payoff cost

limit"[7]). In the case of Tokyo Kyowa and Anzen, losses exceeded the payoff cost limit and additional sources of funds were necessary.

In order to overcome these obstacles, a resolution package was announced. First, the Bank of Japan and private financial institutions established a new bank (named Tokyo Kyoudou Bank or TKB), to assume the businesses of the two failed institutions. The Bank of Japan subscribed Y20 billion of capital and the private financial institutions subscribed another Y20 billion. Second, the DIC would provide the TKB with financial assistance within the payoff limit, and private financial institutions would provide the TKB with low interest rate loans. At the same time, the management of the failed institutions was removed and the institutions were liquidated after transferring their business to the TKB.

The participation of the private financial institutions in providing capital and low interest loans to the TKB was voluntary upon request by the authorities. However, in practice, it must have been difficult for a financial institution to decline such a request, because the private institutions were convinced that such a collective contribution was compatible with their own interest. This collective participation approach was later referred to as the *hougacho* approach. For the Bank of Japan, the provision of the capital was based on Article 25 of the Bank of Japan Law, which was the legal basis for the Bank's lender of last resort function. (Article 25 was replaced by Article 38 in the new Bank of Japan Law enacted in 1998.) The article provided the Bank with the capacity to extend funds to maintain financial stability.

In July 1995, it was announced that Cosmo Credit Cooperative had failed. This announcement was followed by the failures of Hyogo Bank and Kizu Credit Cooperative in August 1995. In the cases of Cosmo and Hyogo, *hougacho* approaches were again formulated. The assets and deposits of Cosmo were transferred to TKB. In the case of Hyogo, a new assuming bank, Midori Bank, was established with Y80 billion of share capital by the private financial institutions and local industrial enterprises. In both cases, the Bank of Japan provided Article 25 liquidity support in the interim period between the failure announcement and the actual business transfer to the assuming banks.

With the case of Kizu Credit Cooperative, the *hougacho* approach faced a major obstacle as the losses were expected to exceed Y100 billion, much larger than the amount that could be collected from the private institutions. It was strongly felt that in order to deal with bank failures in a more flexible way, a revision to the deposit insurance system was necessary. The payoff cost limit was perceived to be a particular obstacle. The resolution package for Kizu was designed on the assumption that future legislation would remove this constraint. The business of Kizu was transferred to the Resolution and Collection Bank (RCB) in 1997, after the Deposit Insurance Law was amended in 1996 (see below).

In 1995-1996, problems with *jusen* became a major issue. *Jusen*, or housing loan corporations, were non-bank financial institutions founded by banks and other financial institutions in the 1970s. In the 1980s, the *jusen* companies shifted their lending towards real estate developers but this strategy proved to be costly in the 1990s. The aggregate losses of the seven *jusen* companies were found to be Y6,410 billion in 1995. The losses were far beyond the amounts that could be covered by founder banks. Following a fierce debate in the Diet, the government decided to use taxpayers' money. This was the first case in which taxpayers' money was used directly to deal with financial instability in Japan. However, the

[7] The payoff cost is the amount of money that the DIC would need, had it opted for a payoff. The cost is typically calculated by subtracting the remaining value of the failed bank from the amount of insured deposits with the failed bank.

public resentment against the government's actions was so strong, that since then it became almost a political taboo to refer to any further use of public funds to address the banking problem. The Bank of Japan was also involved in the *jusen* problem by providing risk capital to the Housing Loan Administration Corporation (HLAC), which was established to assume bad loans of the *jusen* companies.

In June 1996, the Deposit Insurance Law was amended to improve the safety net. Under the new legislation, the payoff cost limit was removed temporarily until March 2001 and the insurance premium was raised. Also, Tokyo Kyoudou Bank, which had been established to assume the businesses of failed institutions in 1995, was reorganised into the RCB. RCB was given the wider role of a general assuming bank for failed credit cooperatives, including the capacity to purchase NPLs from failed financial institutions. While the reformed deposit insurance system provided the authorities with improved flexibility to deal with the failed financial institutions, the size of the DIC's fund still assumed failures of smaller institutions and its access to public funds was limited.

The financial crisis of 1997

In April 1997, Nippon Credit Bank (NCB) announced a restructuring plan. NCB was an internationally active bank with assets of Y15 trillion (as of September 1996). It was heavily exposed to real estate related industries and was suffering from large amounts of NPLs. Since early 1997, NCB had been experiencing severe funding problems that were exacerbated by downgrades by the rating agencies. In July 1997, as part of the restructuring plan, a consortium of related financial institutions and the Bank of Japan injected Y290 billion of new capital. The capital injection by the central bank was in the form of preferred stock. Although NCB survived the imminent crisis, asset deterioration continued and profitability did not improve. As a result, in December 1998, NCB failed and was nationalised.

Meanwhile, the other troubled major bank, Hokkaido Takushoku Bank (HTB), a city bank with an asset size of Y9.5 trillion, failed in November 1997. HTB had a dominant market share in Hokkaido (a northern island of Japan) but its loans for resort development turned sour after the bubble burst. In April 1997, HTB announced plans to merge with Hokkaido Bank, a regional bank, but historical rivalry and the culture gap between the two banks led to a fatal break up of the merger plan. When the merger plan was in effect abandoned in September 1997, deposit withdrawals from HTB started to accelerate. Although it was judged that HTB had little chance of survival on its own, it was thought essential to allow HTB to continue to provide its financial services in Hokkaido, given it dominant role in the local economy of the area. After an effort by the authorities to find an assuming bank, Hokuyo Bank, a regional bank in Hokkaido with asset size of only Y1.8 trillion, agreed to become the assuming bank for the business of HTB in Hokkaido. On November 17th 1997, the failure of HTB was announced. The Bank of Japan provided Article 25 liquidity support to finance massive deposit outflows during the interim period until the business transfer.

On 3 November 1997, Sanyo Securities filed with the Tokyo District Court an application for the commencement of reorganisation proceedings under the Corporate Reorganisation Law. Sanyo was a medium-sized securities house with clients' assets of Y2.7 trillion. As a securities house, it was supervised by the Ministry of Finance (MoF) and was outside of the coverage of the deposit insurance system. The Bank of Japan decided that the case had fewer systemic implications, because securities houses did not provide payment and settlement services, and judged that the Bank would intervene only if the case threatened the stability of the financial system. However, the impact on the inter-bank market quickly emerged. Sanyo was ordered to suspend its business by the court and defaulted on the repayment of the unsecured call money. Although the amount of default was relatively small

compared with the size of the inter-bank market, sensitivities among the market participants increased and the inter-bank market showed clear signs of contraction. In late November 1997, the Bank of Japan stepped in by taking a so-called two-way operation. The Bank injected massive liquidity into the market via purchases of eligible bills, repos and bilateral lending to banks against eligible collateral. At the same time, the Bank absorbed excess yen liquidity building up among foreign banks by drawing bills for sale. The central point was that a default by one financial institution, whether a bank or non-bank, could have developed into a major disruption, especially when the overall financial system was fragile.

On 24 November 1997, three weeks after the Sanyo case, Yamaichi Securities (one of the four largest securities houses in Japan, with clients' assets of Y22 trillion) collapsed. The direct cause of the collapse was the revelation of Yamaichi's off-the-book liabilities amounting to more than Y200 billion. In contrast to Sanyo securities, Yamaichi was allowed to continue its operations to settle existing contracts because the authorities recognised that default by Yamaichi would have had a severe impact on both domestic and overseas markets, given the size and complexity of the firm. The question that arose immediately was who should provide the liquidity. Although the Bank of Japan Law provided the central bank with the capacity to lend non-bank financial institutions to address financial instability, the prospect for the Bank of Japan for recovering its loans to Yamaichi was far from certain. While repayment of loans by the central bank to a bank was insured by the deposit financial system, there was no way to use the deposit insurance fund to cover potential credit losses in Yamaichi's case, as the securities house was outside the coverage of the deposit insurance system. In the final hours before the failure announcement, a basic understanding was reached between the MoF and the Bank of Japan to use funds with the Compensation Fund for Deposited Securities (a safety net arrangement designed to protect retail investors funded mainly by securities firms) if Yamaichi become insolvent. Based on the agreement, the Bank of Japan extended liquidity support to Yamaichi, which reached an outstanding amount of Y1,200 billion at its peak in December 1997. However, as had been feared, the Tokyo District Court declared Yamaichi bankrupt in June 1999. The net losses of the firm were too large to be covered by the Compensation Fund for Deposited Securities. As a result, the Bank of Japan, as the largest single creditor in the bankruptcy proceedings, faced credit risk. As of July 2002, the question of who was going to bear the final costs was still unresolved.

On 26 November 1997, the failure of Tokuyo City Bank was announced. Although Tokuyo was a regional bank operating in a northern Japanese city, the psychological impact of its failure was significant, because this was the fourth collapse that month. Rumours and speculation spread that other banks were on the brink of collapse. Depositors formed long queues at those targeted banks to withdraw money. The Finance Minister and the Governor of the Bank of Japan issued an extraordinary joint statement later the same day, confirming that all deposits were protected and that the central bank would provide sufficient funds to ensure smooth withdrawal of deposits.

The financial crisis of 1998

In February 1998, legislation was established to use public funds to address the financial crisis. Under the legislation, a total of Y30 trillion of public funds including those for capital injection to banks were made available. A newly created Financial Crisis Management Committee was made responsible for identifying the banks that needed capital injection, but the Committee did not have supervisory power over individual banks. Also, all major banks collectively applied for capital injection in order to avoid the risk of being singled out as a weak bank. As a result, all major banks received a capital injection in March 1998 totalling Y1.8 trillion. However, this did not generate a positive response in the markets, because the

amount of the capital injection was regarded as far too small and most of the new capital was Tier 2 capital (subordinated loans and bonds).

In 1998, Long Term Credit Bank of Japan (LTCB) failed, the largest bank failure case in Japanese history. LTCB was one of three long-term credit banks, and had assets of Y26 trillion. Initially, the authorities sought a bailout merger of LTCB with Sumitomo Trust Bank, but the efforts turned out to be unsuccessful because Sumitomo Trust was doubtful about the potential size of LTCB's NPLs. One of the Bank of Japan's concerns in dealing with the LTCB problem was LTCB's derivatives portfolio. If LTCB collapsed in a disorderly way, it would constitute an event of default as set out in the ISDA master agreement, which would in turn accelerate enormous and rapid hedging operations by LTCB's counterparties. The authorities recognised that LTCB had to be dealt with through the safety net arrangements and found that in order to attain an orderly wind-down, an amendment to the deposit insurance framework was necessary. The Diet discussion in the summer of 1998 produced a significant piece of legislation - the Financial Reconstruction Law - under which a failed bank could either be placed under Financial Reorganization Administration (FRA) or temporarily nationalised. Under the new Financial Reconstruction Law, LTCB was nationalised in October 1998. Bad loans were removed and losses were covered by the existing shareholders and the DIC. New capital was injected using public money. Subsequently, in February 2000, LTCB was purchased by New LTCB Partners, which was founded by Ripplewood, a US investment fund. In the interim period, the necessary liquidity was provided by the DIC, financed in turn by the Bank of Japan.

Systematic management of the crisis, late 1998 to 2000

The LTCB crisis led to two pieces of important legislation. One was the Financial Reconstruction Law as described above. The second was the Financial Function Early Strengthening Law, which replaced the legislation of February 1998 governing capital injections into viable banks using public money. To operate the entire safety net under the new laws, the Financial Reconstruction Committee (FRC) was established. Unlike the Financial Crisis Management Committee, which handled the first capital injection in March 1998, the FRC was vested with the authority to inspect and supervise financial institutions as the parent organ of the Financial Supervisory Agency (FSA), the latter of which took over the supervisory power of the MoF in June 1998. With respect to the financial resources for the new framework, available public funds were doubled from Y30 trillion to Y60 trillion.

With the new comprehensive safety framework in place, the authorities were now able to deal with a failed bank without necessarily finding an assuming bank beforehand. Also, for viable but under-capitalised banks, large-scale capital injections were also now possible. In March 1999, the FRC decided to conduct the second capital injection to 15 major banks. The aggregate amount of public capital injected was Y7.5 trillion, more than four times the previous injection in March 1998. Most of the capital was in the form of Tier 1 capital (preferred stock). In calculating the required amount of capital injection, the FRC took both unrealised capital losses and potential loan losses into account. In addition, to ensure that the public money would be recovered, the FRC also required the banks to submit plans for improving profitability.

While the second capital injection generated a positive response by the market, it was thought that two more steps had to be taken to achieve the goal of resolving the banking problem. First, banks must remove bad loans from their balance sheet. As an infrastructure to achieve this, the RCB was reorganised into the Resolution and Collection Corporation (RCC) and given wider powers, including the capacity to purchase bad loans not only from failed banks but also from solvent operating banks. In addition, a legal framework for the

securitisation of bad loans using special purpose companies (SPCs) was made available. Along with the RCC, the DIC now developed into a significantly larger independent organisation with more than 2,000 staff members. Second, further consolidation was felt to be necessary. Some banks announced explicit plans for mergers and alliances during the year of 1999. As of July 2002, the major banks had been consolidated into five large financial groups.

In May 2000, the Deposit Insurance Law was again amended. According to the new legislation, the termination of special measures to fully protect deposits was extended by one year until the end of March 2002. Also, as a transitional arrangement, liquid deposits such as current deposits and ordinary deposits would be fully protected until the end of March 2003. The extension was mainly to ensure the stability and soundness of small cooperative deposit-taking institutions, whose supervisory responsibilities were transferred from local authorities to the FSA in April 2000. In the meantime, the framework to prepare for the termination of the special measures after April 2002 was established, including a bridge bank scheme and legislation for enlarging the capacity of the DIC. In addition, even after April 2002, when systemic risk was anticipated, exceptional measures could be adopted so that all deposits could be fully protected.

Causes of the financial crisis in 1990's

One of the unusual aspects of Japan's banking crisis is the length of time it took to address the problems. While there were various problems that jointly caused the crisis, this section focuses on the problems of non-performing loans (NPLs) and banks' capital positions, two primary sources of the crisis, and explores reasons why it has taken so long to contain the crisis.

Problem on non-performing loans

As financial institutions across the board in Japan were heavily exposed to the real estate related industry, declining real estate prices created a significant amount of NPLs after the burst of the bubble economy. This problem had yet to be resolved as of July 2002.

Negative impact on the economy

As the banking sector has been the dominant supplier of credit to the corporate sector in Japan, the declining capacity of banks to extend new loans after the bubble burst has discouraged business investment by the corporate sector. The resultant economic contraction has further undermined the asset quality of banks, thus trapping the financial system and the real economy in a vicious circle that has dragged the economy into a recession. It was widely recognised that unless NPLs on banks' balance sheets were thoroughly cleaned up, their negative impact on the economy would not be completely alleviated. However, financial techniques like securitisation of real estate-related NPLs only became fully available in late 1990's.

Insufficient provisioning

While the size of NPLs kept increasing after the bubble burst, banks were generally under-provisioned in the early 1990's, partly due to the existence of stringent rules on specific provisioning. Not only tax-deductible but also non-tax-deductible provisioning had to satisfy

extremely demanding criteria such as a high default probability of the loans. In addition, bank's provisioning required reporting to the MoF. Thus, banks' financial statements did not adequately capture even the past credit events, obscuring the general deterioration in asset quality of the banking sector.

In 1997, the reporting requirement to the MoF was abolished, and replaced by a new provisioning policy based on banks' self-assessment of the loan portfolio. In 1999, further explicit guidelines for provisioning were set forth in the FSA's inspection manual, which ensured that inspection results by the supervisor would be properly reflected in banks' financial statement. These measures resulted in huge charge-offs and provisioning during FY 1997-98. Although the introduction of the new provisioning guidelines were a step in the right direction, massive charge-offs and provisioning squeezed banks' profitability, imposing severe constraints on banks' capacity to supply credit.

Inadequate market discipline

Market discipline also did not work properly. Public disclosure on NPLs was virtually non-existent before early 1990s, partly because the rules on provisioning were bound by the tax law standards. The disclosure requirement had been reinforced in the 1990s, but only on a step-by-step basis. For example, the amount of disclosed NPLs of Japanese banks increased in FY 1995 and FY 1997, but the increases could largely be attributed to an expansion in the definition of NPLs. The piecemeal revision of the disclosure standard undermined the credibility of publicly disclosed figures of NPLs.

As there was limited information on banks' asset quality available for the public, combined with the fact that there were no major bank failures until the mid 1990's, the sense of self-responsibility of depositors was not cultivated at the time. Thus, the authorities needed to put priority on preventing a panic in the market. There were significant discussions on how much disclosure should be made and how quickly the scope of the disclosure should be expanded. Such a climate made it more difficult to carry out a measure that would result in depositors incurring losses. Also, as there was no way to distinguish between depositors and general creditors, all the creditors were protected in the resolution scheme. As a result, the market discipline did not work properly, which prevented the financial markets from effectively providing adequate incentives for banks to avoid moral hazards.

In order to improve the situation, a comprehensive disclosure requirement was introduced in 1999. The new standards were disconnected from the tax law standards. With regard to the scope, the standards focused on the credit status of a borrower.

Deterioration in banks' capital positions

Although it was recognised that banks' capital positions should be improved in order to resolve the NPLs problem and to increase the banks' capacity to extend new loans, measures taken to raise the level of capital were limited during the crisis. First, while retained earnings should be the primary source for strengthening banks' capital positions, business profitability in the banking sector in Japan was quite low compared with most other countries, making it difficult for banks to internally accumulate capital. Second, issuance of new stocks in the capital market was virtually impossible, because Japanese banks had been downgraded frequently and banks' stock prices were generally declining. Third, capital injection using public funds was not easily available.

As the measures to improve the banks' capital, such as accumulation of retained earnings and issuance of new stocks, were not available, the injection of capital using public funds

was the only possible policy response which could dramatically improve banks' capital position. However, there had been a strong public resentment about the use of taxpayers' money. This was partly because, in the first half of the 1990's, there was a strong belief that big banks would never fail under the "convoy system", in which even weaker banks would be protected. The resulting general lack of a sense of urgency and support for the use of public funds prevented the authorities from taking decisive action. In addition, the *jusen* problem in 1996 (the first case in which taxpayers' money was used to address financial instability) fuelled the resentment, as this incident was considered a bailout of the financial institutions lending to *jusen*. As a result, the comprehensive safety network was not provided until late in the financial crisis.

Among the various measures to strengthen banks' capital positions, improvement of profitability is considered the most important prerequisite. In fact, in order for the capital injection of public funds to succeed, banks must improve their profitability. Also, the stock price of a bank, which would be a determinant factor of the bank's ability to raise the capital from the stock market, would be a reflection of the market's expectation on the bank's future profitability. However, most Japanese banks are still in the process of struggling with the structural reform to improve their profitability, and this remains the largest challenge for Japanese banks.

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The Banking Crisis in Norway[8]

Summary

The Norwegian banking crisis lasted from 1988 to 1993, peaking most dramatically in the autumn of 1991 with the second and fourth largest banks in Norway (with a combined market share of 24%) losing all their capital and the largest bank also getting into serious difficulty. From 1988 until 1990, the failing banks were mainly some local or regional banks. The early part and the peak of the crisis coincided with the deepest post World War II recession in Norway. By late 1993, the crisis was effectively over.

The section on the Norwegian banking crisis is organised as follows. First, the industry structure, and the regulatory and supervisory regime before the crisis are presented. Second, the macroeconomic conditions leading up to the crisis are described. Next follows a description of how the crisis evolved and the measures taken by the authorities to resolve it. Then some regulatory changes during and in the aftermath of the crisis are presented. The section finishes with a look at the way out of the crisis

Prior to the crisis

Banking industry characteristics

In 1987 (the year before the first signs of a banking crisis emerged), the Norwegian banking industry consisted of 193 domestic banks, of which 132 had total assets of less than US$100 million each. These local banks mainly did retail banking for individuals and to some extent small firms. In addition, there were eight subsidiaries of foreign banks, with a combined market share for bank credit of only 0.5%. Two banks, CBK and DnC[9] were nationwide. Their market shares for bank credit were 14% and 13% respectively. The fourth and fifth largest banks at that time, NOR and Fokus Bank, were to a large extent regional banks (Fokus was established through mergers of four smaller regional banks). In between the small single-office banks and the five larger banks, there were smaller regional banks. Almost all the local banks, the majority of the smaller regional banks, and the fourth largest bank (NOR), were organised as savings banks, i.e. mutually held institutions. The others, including most of the larger banks, were organised as commercial banks owned by external shareholders. None of the savings banks had issued any shares to external investors. However, by late 1988, some of the savings banks had started to issue primary capital certificates publicly; instruments almost equivalent to shares, except that they give only a limited right of governance, and confer no property rights to the assets of the bank.

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[8] Numbers and statistical records presented in this section originate from Norges Bank or Statistics Norway unless otherwise stated.

[9] DnC was merged with the third largest bank Bergen Bank into DnB in early 1990, before the crisis was systemic. Since the merger, DnB has remained the largest bank in Norway.

Regulation and supervision

Quantitative regulations on bank lending (not as prudential regulation but as a means to control credit flows as part of the macro stabilisation policy) and a cap on the interest rate charged by banks on lending were lifted in 1984 and 1985 respectively. These regulations had been applied more or less since 1945. As a result, bank managers were not used to operating in a competitive market. After 1984, banks focused on gaining market share. For example, the total number of bank branches grew from 1,983 to 2,177 between 1983 and 1987. A number of banks also expanded into new geographical areas in that period. The result was a huge growth in bank lending. Between December 1984 and September 1986, the real 12-month growth in bank loans was above 20% for all but one quarter (see Figure 1). Some of the growth in bank lending right after the liberalisation might have reflected a shift of loan portfolios from partly unregulated institutions other than banks (the so-called "grey" credit market) to banks. Nevertheless, the strong growth in real demand following liberalisation (see below) indicates that the larger part of the growth in bank lending was net growth in total credit to non-financial domestic sectors.

In the quantitative regulation period before 1984, capital regulation was not given a high priority, and the formal capital requirement was loosened. By 1961, commercial banks had to maintain a ratio of equity to total assets of 8%, which was reduced to 6.5% from 1972, though it was combined with stricter enforcement. For savings banks, statutory capital requirements were not introduced until 1988, when the requirements were set to match those for commercial banks. In 1987, three years after bank lending had been liberalised, capital regulation was loosened. Perpetual subordinated debt was approved on equal footing with equity for capital requirements, following strong requests from the industry. In 1990, it was decided that Norway should gradually adopt the 1988 Basel Accord, with full implementation by end-1992.

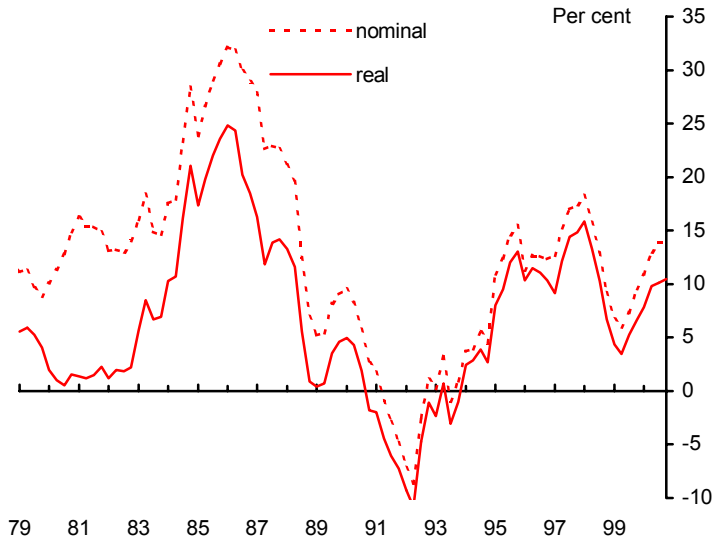
Prior to, and during liberalisation, the level of bank supervision carried out by the former Inspectorate of Banks was reduced. In 1986, the Inspectorate was merged with the Insurance Council into the Banking, Insurance and Securities Commission. On-site inspection had been scaled back in favour of more document-based inspection. While the number of on-site inspections in Norwegian banks was 57 in 1980, it had dropped to eight in 1985, and down to one and two in 1986 and 1987 respectively. Nevertheless, from 1988 onwards, when the first signs of banking problems had emerged, bank supervision was given high priority. In 1989, the number of on-site inspections increased to 44. However, during the late 1980's the Commission had problems in recruiting the sufficient number of qualified people to carry out the banking supervision.

It is worth noting that legally, the Banking, Insurance and Securities Commission from 1988 onwards had a mandate to apply discretionary measures towards individual banks regarding, for example, capital adequacy and exposures to single customers. The Commission has never actually used this mandate. However, in dealing with a few banks the Commission has made it clear it was ready to apply such measures. At least in these cases, the existence of such a "threat" probably influenced the banks' behaviour in a desired direction.

Macroeconomic background

Before the deregulation of credit markets in Norway, there was a cap on the interest rate charged by banks on lending. Furthermore, in the tax system, all nominal interest expenses had been deductible before tax. The combination of high marginal tax rates and relatively high inflation in the early 1980's, led to negative real after-tax interest rates for households and many firms. Hence, upon deregulation of credit markets in 1984 and 1985, there was pent up demand for credit, which was then largely met by the increase in banks' lending (see Figure 1).

Figure 1: Percentage growth in bank credit (12 month)



Other factors also contributed to the growth in bank lending. During the early 1980's, the second-hand housing market was deregulated. Between 1984 and 1987, house prices (adjusted for inflation) increased by 24%, enhancing the ability of banks to offer mortgage lending to households.[10] A similar effect on banks' commercial lending resulted from a boom in commercial real estate starting in 1984 and peaking in 1988 after an increase of around 70% in offices rental prices.[11] Furthermore, Norwegian banks could fund themselves abroad even though some foreign exchange regulations remained. Banks were required to maintain a zero net position between Norwegian kroner and foreign currencies. However, from 1978 on, the position was measured as the net of exposures in the spot market and the forward market for foreign currencies. This implied that banks, by combining forward and spot positions, could fund part of their domestic lending in Norwegian kroner through short-term capital flows from abroad. Commercial banks' foreign debt (excluding subordinated debt) relative to total assets increased from 17% in 1983 (the year before deregulation) to 26% in 1986.[12]

Adding to the growth in bank lending, fiscal policy changed from neutral to expansionary during this period. The result was a huge increase in domestic demand. Private consumption grew at a record rate of 9.4% in 1985, and a further 5% in 1986. This was reflected in a large drop in the households' net financial investments (see Figure 2). In early 1986, the sharp drop in the oil price exposed the Norwegian economy (with its large oil and gas exporting sector). The current account changed from a surplus of 4.8% of GDP in 1985, to a deficit of 6.2% of GDP in 1986. The combination of the drop in oil prices and an unsustainable rise in private consumption implied that there was need for a consolidation of the macro-economy. Fiscal policy turned contractionary in 1986 and remained so until 1988.

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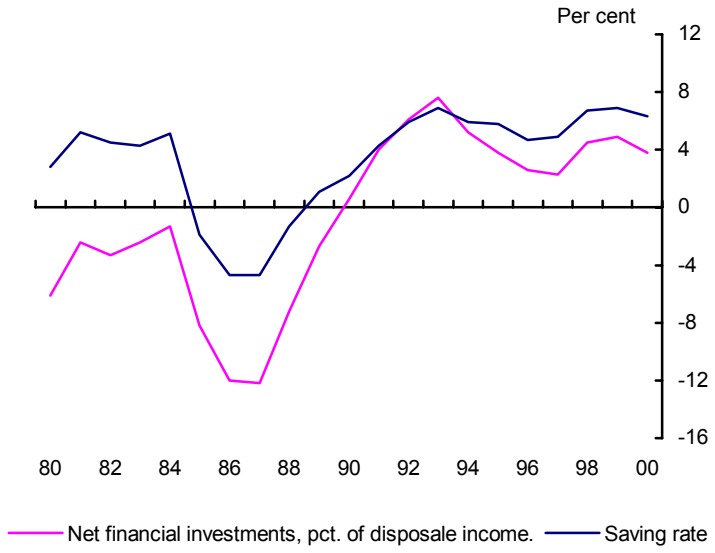
[10] Source: Statistics Norway and ECON.

[11] DnB, Dagens Næringslivand Eiendomsspar.

[12] Source: Norwegian Official Reports 1992: 30E.

Figure 2: Household saving as a percentage of disposable income



At that time, Norway like many other small European countries had a fixed but adjustable exchange rate. Following a series of devaluations, (mostly small ones, between 1977 and 1984) the drop in the oil price in early 1986 triggered a devaluation of 9.2% in May 1986, after which the fixed exchange rate regime was maintained. In the months before the devaluation, the central bank's sales of foreign exchange in defence of the Norwegian krone were sterilised in order to dampen the rise in the money market interest rates. This reflected the political authorities' priority of a stable nominal interest rate. The market for government securities in Norway was thin (due to low government debt). Therefore, the sterilisation was carried out by increasing central bank lending to banks from zero to a level between 10% and 15% of banks' funding (see Figure 3). In that way, the policy of sterilised interventions contributed to the high growth in bank lending.

The spread between the Norwegian krone and the Deutsche Mark increased during 1986 and stayed high until 1989, when confidence apparently was increased after three years without any devaluation. However, at that time, the German interest rate started to increase, preventing a further major fall in the Norwegian interest rate, which thus remained relatively high through the late 1980's and early 1990's (see Figure 4). Combined with lower inflation and a reduction of the marginal tax rate, this caused the real after-tax interest rate for a borrowing household to rise steadily, from 2% in 1988 to 7.5% in 1992.[13]

[13] A reduction in marginal tax rates after 1985 and the rise in the money market interest rate caused the real after-tax interest rate to move from negative to positive.

Figure 3: Liquidity supply from Norges Bank (billions of NOK)

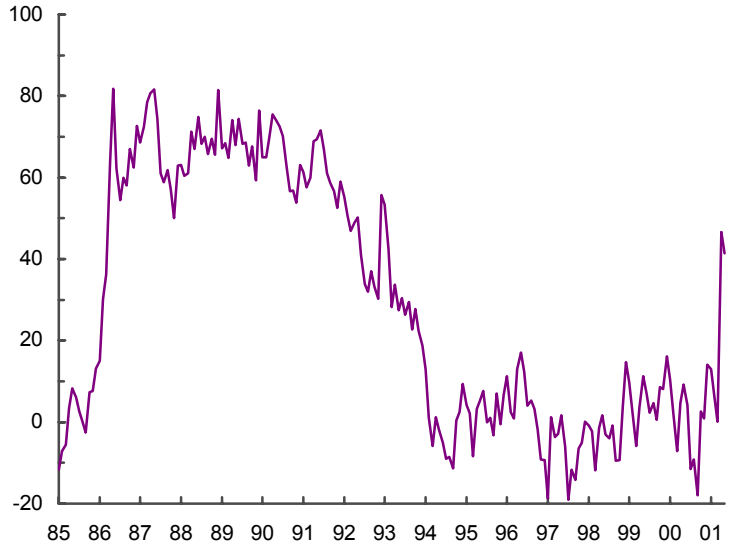
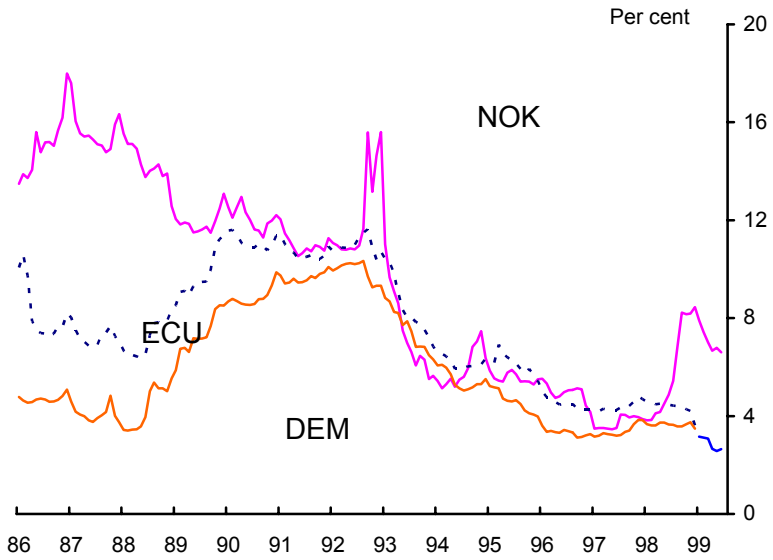


Figure 4: Interest rates, 3 month. 1986 - June 1999



Furthermore, the boom in real asset prices collapsed. CPI adjusted house prices fell by about a third from 1988 to 1992. Also, the commercial real estate market saw a large price fall, reducing the value of collateral in the banks' commercial loan portfolios.

The average annual real growth in domestic aggregate demand was 6.5% in 1985 and 1986, and fell to 1.5% in the period 1987 to 1990. Unemployment rose from 1.5% in 1987 to 4.3% in 1990. I.e. a strong boom with an unsustainably high growth in consumption was followed by the deepest recession since World War II.

Description of the crisis

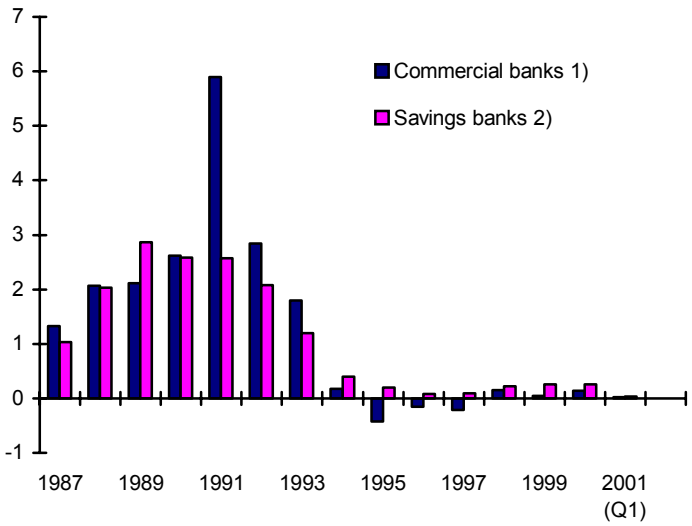
The causes of the crisis once it had fully emerged could thus be summarised :

- Banks that were used to a regime of strict quantitative regulations became exposed to an entirely new competitive environment. The response of a large number of the banks was to strive for larger market shares.
- Prudential regulation was slow to adapt to the new competitive environment.
- A strong boom followed by a sharp recession enhanced by a monetary policy regime that worked pro-cyclically.

With respect to the first point, it has to be stressed that not all banks followed the strategy of "increasing market share". Most of the small local banks did not change their behaviour in any dramatic way. The same was also the case for a few regional banks.

The crisis manifested itself primarily in loan losses, i.e. it was a problem of credit risk. Whereas the crisis in terms of banks' recorded loan losses peaked in 1991 (see Figure 5), the first Norwegian bank failure after the 1930's occurred in 1988.

Figure 5: Banks' recorded loan losses (percentage of lending)



1) Incl. Postbanken from 1995. Excludes Norwegian banks' branches abroad.
2) 24 largest up to 1992, all from 1993.

During the next two years, a couple of smaller banks and some regional medium-sized banks failed. The size of these banks did not yet qualify to call it a systemic crisis. However, by late 1990, the situation in the larger banks became worse, and the banks' own guarantee funds were effectively depleted. It was then decided to establish a Government Bank Insurance Fund (GBIF).

The situation for the largest banks continued to deteriorate, peaking in the autumn of 1991 when the second largest bank, CBK, and the fourth largest bank at that time, Fokus, had

record loan losses, such that all their original share capital was lost.[14] These two banks had a combined market share of 24% of bank lending to domestic non-financial sectors. The largest bank, DnB, with a market share of 26%, also suffered large loan losses and it was estimated that by year-end 1991 its capital ratio would be only 2%. At this stage, and with the economy still in recession, there was no doubt that Norway was facing a systemic banking crisis.

During 1991, a couple of smaller banks also failed, and during the autumn of 1991, two regional savings banks (Sparebanken Rogaland and Sparebanken Midt-Norge) lost their equity.

To illustrate the magnitude of the problems it should be noted that five banks accounting for more than half the domestic bank lending were now in deep trouble. The recorded loan losses of all banks in 1991 amounted to 3.5% of GDP in mainland Norway.

The problems in the three large banks (DnB, CBK and Fokus) continued during 1992. During the latter half of that year, it was evident that in spite of the capital infusion in 1991 (see section below on problem resolutions) they would not be able to meet the minimum capital requirement of the 1988 Basel Accord, which was to be fully complied with by the end of 1992. Postponing the full implementation of the Accord was not considered a viable option for a small open economy. By mid year 1992, 15% of the commercial banks' funding was from abroad, and an impression that Norway was going to renege on complying with international standards, might have caused a run on these banks from their foreign creditors.

Resolution of the banking crisis

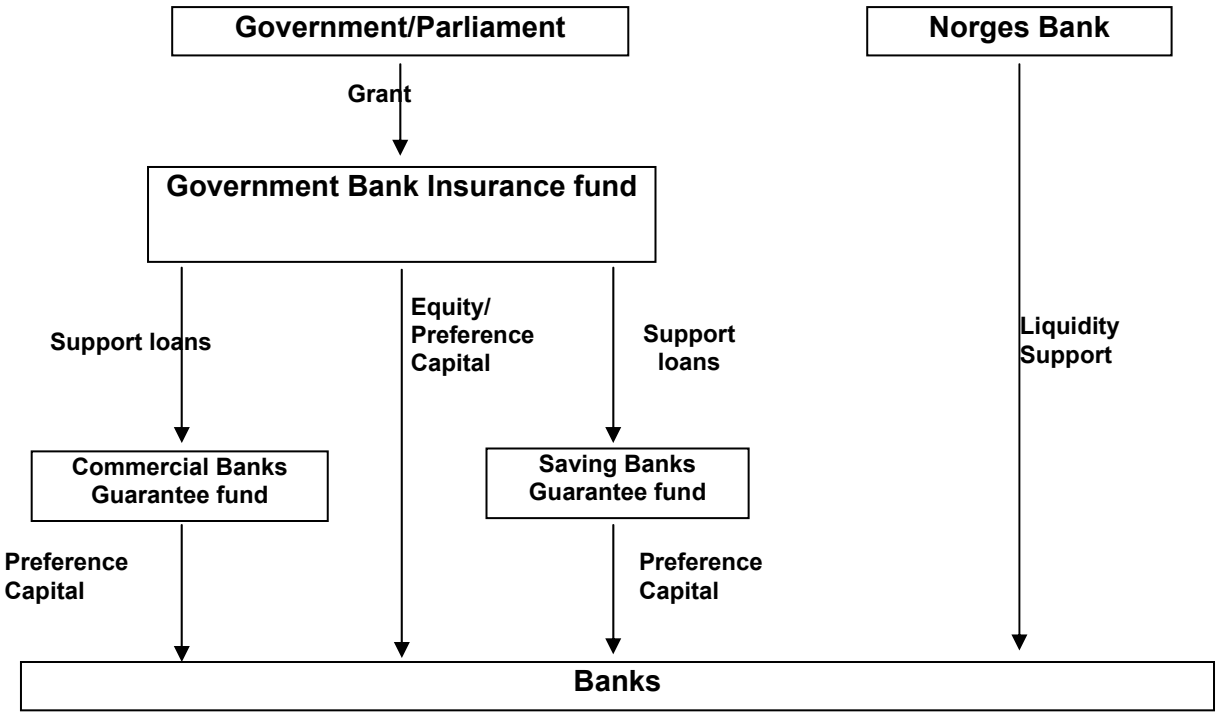
During the first part of the banking crisis (1988 to 1990), measures taken to deal with problem banks were mostly financed by the banking industry's own guarantee funds. In addition, the central bank provided liquidity support on an individual basis. There were two guarantee funds with mandatory membership, one for the commercial banks and one for the savings banks. Both funds capital consisted of accumulated annual premiums from member banks. The majority of the funds' board members were from the industry. The guarantee funds had (and still has) a wide mandate, i.e. beyond paying out depositors at failed institutions they could infuse capital into member banks and issue guarantees against the portfolio of a member institution. With two exceptions, all of the 17 local and regional banks that failed or got into serious problems between 1988 and the first half of 1991 were merged with larger still solvent banks. For the acquiring bank to agree, the guarantee fund of the distressed bank issued guarantees regarding some of the bank's portfolio, issued a specific equity guarantee for the bank, and/or in connection with mergers infused capital, to cover negative net worth of the failed bank. As the economy was in a recession during these years, this way of solving the problems was regarded as less costly to the funds than liquidating the banks and selling or possibly even calling back loans. Just one small and newly established commercial bank was liquidated. That was the only case in which bank creditors other than the central bank lost money. In one case of a regional bank failure in 1989, following the decision by political authorities, the central bank contributed to the bank's solvency by writing off a liquidity loan to the failed bank. However, afterwards, it was stressed by Parliament that

[14] During the summer of 1991, both banks received an injection of new capital from GBIF, via the bank's own guarantee fund. (See section below on problem resolution.)

public solvency support to a distressed bank should be funded by grants from Parliament. The central bank's contribution should be liquidity support.

By late 1990, the banks' guarantee funds were effectively depleted and serious problems with loan losses appeared at the larger banks. The weak earnings and the large uncertainty about the banks in general made it almost impossible to attract external equity capital in the market. Therefore, in December 1990, the government announced that it would establish a Government Bank Insurance Fund (GBIF), and in March 1991, it was formally set up. GBIF was granted a specific amount of capital from the Parliament and had a mandate to lend capital to the two bank guarantee funds in order for them to invest equity capital into distressed banks (see Figure 6). GBIF could impose conditions on the fund and the bank benefiting from such a support loan.

Figure 6: The safety net to resolve the banking crisis



The purpose of the GBIF was to avoid the macroeconomic consequences of closing large banks during the recession. This could include loss of depositors' money, money market runs on banks, further contagion in the financial system, severe credit crunch, and ultimately an even deeper recession. Furthermore, by establishing GBIF, the government was signalling that it realised there was a systemic banking crisis and that it intended to take measures to resolve it.

During the summer of 1991, GBIF gave its first support loans to the commercial banks' guarantee fund in order for it to supply capital to the second and fourth largest banks (CBK and Fokus) that had reported large losses and insufficient equity. The loans were given on certain conditions:

- The two banks were required to reduce their operating costs.
- The board of directors was replaced at both banks.
- The original share capital was written down according to the losses.

- The government got a majority of the board members in the commercial banks' guarantee fund.
- The loans were to be paid back with interest from the guarantee fund.

Similar arrangements were also made with the savings banks' guarantee fund to supply capital to two regional savings banks (Sparebanken Midt-Norge and Sparebanken Rogaland), which had lost all their equity by August 1991.

During the autumn of 1991, it became evident that the second largest bank (CBK) had negative equity, the fourth largest bank (Fokus) had lost all its original share capital, and the largest bank (DnB) had equity well below the required level. The government announced extraordinary measures. These included:

- A doubling of the GBIF's capital.
- Allowing GBIF to infuse new capital directly into distressed banks.
- Loans from the central bank to all banks at interest rates below market rates. At this time, approximately 10% of the banks' funding was loans from the central bank.
- A grant from parliament to the savings banks' guarantee fund.
- Banks' annual premium to their own guarantee funds was cut by three quarters.
- A separate Government Bank Investment Fund was established to invest capital on commercial terms.

Attempts to find private investors willing to put equity into the two large failed banks (CBK and Fokus) were unsuccessful. As a result, the GBIF infused new equity capital directly into the two banks.

These infusions were made on the condition that the old shareholders' shares were written down to zero in accordance with the banks' losses. These decisions had to be made by the banks' General meetings of shareholders. At both banks, the shareholders refused to write down the shares as required by GBIF. In order to avoid a stalemate in such a situation the Parliament had one month earlier made an amendment to the Commercial Bank Act. This amendment made it possible for the government by a Royal Decree to write down the share capital of a bank against losses in the audited interim accounts, if the shareholders' General meeting did not do so. Thus in December of 1991 the government wiped out the old shares of the two banks, and new capital was injected by the GBIF.

In December 1991, new equity capital was provided by GBIF to the largest Norwegian bank (DnB), which by year end was estimated to have a capital ratio of only 2%. This infusion was made on conditions similar to those that already applied to the two other large banks. However, the board and top management were not changed as they had come into their positions after the foundations of the bank's problems had been laid. The old shares were written down by 90% in accordance with the bank's losses.

The larger banks had issued subordinated debt as part of their Tier 2 capital. According to the conditions of these issues, the subordinated debt could not be written down unless the bank was closed. This meant that none of the owners of subordinated debt in the failing banks lost their capital, in spite of it being junior to all other creditor claims. Since 1997,

banks have not been allowed to issue perpetual subordinated debt as Tier 2 capital unless it can be written down against the bank's losses even if the bank is not closed. [15]

As the three large banks continued to record loan losses through 1992, and it was evident that they would not meet the Basel Accord standards by the end of 1992 as required, they all applied to the GBIF for new infusions of capital. In November 1992, agreements were reached on the terms of these capital infusions. Infusions were made sufficiently large that the banks would meet the Basel Accord requirements by year-end 1992. Among the conditions for the new capital infusions were:

- The banks would reduce their number of branches and continue to cut the operating costs in the year ahead.
- The banks would maintain or reduce their total assets, for one bank (Fokus) by selling its loan portfolio in certain geographical regions, i.e. abandoning its former ambitions of covering most of the country.
- The old shares in DnB would be written down to zero in accordance with the bank's losses.
- Banks should increase their earnings from payments services by increasing fees and thus bringing them closer to costs. In order to assist in this the government decided that the government owned Postal Giro should abandon its policy of zero fees for payment transactions.

What was not done in the resolution of the Norwegian banking crisis

It was decided not to establish a separate "bad bank" to handle the failed bank's problem loans. There were several reasons for this. A "bad bank" would have to be completely financed by government, particularly given the extremely low supply of risk capital during the crisis. Thus, more taxpayers' money than that already infused as equity into the troubled banks would have had to be put at risk. Furthermore, handling some problem loans will always be part of a large bank's business, and removing a large part of the banks' staff with this expertise might have left banks more vulnerable when they encountered new problem loans. Finally setting up a "bad bank" and selling bad loans from the banks to the "bad bank" would have required much extra accounting and legal work.

Unlike the Swedish banking crisis, an explicit guarantee to creditors of all banks by the Norwegian parliament was never issued. Although the Norwegian crisis was systemic, a large part of the bank system remained relatively healthy. Such a guarantee might have reduced the incentives of healthy banks to take the desired precautions in their lending.

Finally, no major restructuring of the banking industry was done during the crisis.

Regulatory changes during and in the aftermath of the crisis

The basic structure of the regulatory system that was in place before the crisis was kept during the crisis and afterwards. The same is true for the capital regulation in the sense that the decision in 1990 to adopt the Basel Accord by the end of 1992 was maintained through the crisis. However, some regulatory changes were made, mainly because of the crisis.

[15] Perpetual subordinated debt is the only subordinated debt that is approved as 100% Tier 2 capital.

These were designed both to reduce the probability of future bank failures and to improve the resolution process in the event of another bank failure.

- The number of on-site inspections was increased dramatically as signs of a crisis emerged.
- If the general meeting of shareholders in a bank with huge losses refused to write down the existing shares according to the losses, the government got a legal mandate to write them down.
- From 1997 onwards, banks have not been allowed to issue perpetual subordinated debt as full Tier 2 capital unless it can be written down against losses, even if the bank is not closed.
- In 1992, the Parliament decided to strengthen the Banking, Insurance and Securities Commission by devoting more resources to it. The Commission started to monitor closely macroeconomic conditions, and exchange of information with the central bank has been strongly improved.

As bank lending started to grow rapidly again in 1996 and 1997 (see Figure 1), the Banking, Insurance and Securities Commission in 1998 sought measures to increase banks' Tier 1 capital ratio. Banks with a core capital ratio below 7% would normally not be allowed to raise non-perpetual subordinated debt as Tier 2 capital. By late 1999, no bank had a core capital ratio below 7%.

Conclusions

As the Norwegian banking crisis was mainly due to credit risk, there is little doubt that a more risk based system of credit risk evaluation would have helped both bank managers and supervisors in being more aware of the risk involved in the credit expansion in the mid-1980's. Nevertheless, it is worth noting that in the absence of such systems, higher cushions of capital at the time of deregulation in 1984 could have made a difference. A comparison with the development of bank problems in Denmark can illustrate this point.

During recessions in Denmark in the late 1980's and early 1990's, Danish banks suffered loan losses similar in size to those at Norwegian banks. However, this did not result in any major bank failures in Denmark. One of the differences between the Danish and the Norwegian regulatory regime at that time was a much stricter capital requirement in Denmark (requirements that were, in fact, stricter than the 1988 Basel Accord). Hence, when the Basel Accord was implemented in Denmark in 1991, the banks had a relatively large capital buffer that helped them to withstand the loan losses.

Way out of the crisis

During 1993, macroeconomic conditions in Norway improved. After the Norwegian krone started to float in December 1992, the money market interest rate fell rapidly (see Figure 4). Mainland GDP, which grew by only 1% and 2% in 1991 and 1992 respectively, grew by 2.8% and 3.8% in 1993 and 1994. Banks' recorded loan losses fell markedly from 1992 to 1993, and were close to zero by 1994 (see Figure 5). As a result, commercial banks overall started to record positive net operating profits from 1993 onwards.

By the end of 1993, the second largest bank (CBK) was able to raise equity in the market. Furthermore, in the late spring of 1994, the largest bank (DnB) raised equity in a joint operation with GBIF, selling out part of its shares to the market. In 1995, the fourth largest

bank (Fokus) was completely reprivatised, and in 1999 it was acquired by Den Danske Bank, of Denmark. In 2000, the government sold its final holding of 34% of the shares in CBK, which became a subsidiary of the Nordic banking group, Nordea. The government still (as at 31 October 2003) has a 47.78% equity stake in DnB.[16]

The total gross fiscal costs of the rescue operations were approximately 3% of GDP. By end-1993, the net fiscal costs (gross fiscal costs minus value of government's bank shares) were estimated to be 0.8% of GDP.[17]

[16] The continuation of a government equity stake in DnB is not related to the crisis. Rather it reflects the desire of the political authorities to ensure the presence of a major bank head office in Norway.

[17] Source: Report to the Parliament no.39 (1993-94), Ministry of Finance.

Bank Failures in Spain

Summary

During the past three decades, there have been a number of episodes of bank failures in Spain. First, a banking crisis of considerable proportions spread during the period 1978-1983.[18] Subsequently, the first half of the 1990s saw the failure of some very small banks and eventually, in 1993, of Banesto, at that time the fourth largest Spanish bank by volume of deposits. The majority of this paper focuses on the 1978-1983 episode, referring to the Banesto crisis whenever appropriate.

Prior to the crisis

Banking sector characteristics

At the beginning of the 1960s, the Spanish banking system was regulated rigidly. Maximum interest rates were set on deposits and minimum lending rates. There were mandatory investment coefficients in government debt or in economic sectors selected by the government for strategic or social reasons. The opening of branches was completely regulated, with a quota system for new branch permits. The number of banking licences remained frozen for many years. In particular, from 1921, foreign banks were banned from operating in Spain. There was a clear separation, based in some cases on regulatory provisions, between the operations of commercial banks (focused on short-term corporate financing and high-income customers) and those of savings banks (which had a small market share and focused on attracting the savings of small depositors and financing house acquisitions, with practically no corporate business).

In 1962, banking regulations were eased in one specific area: the possibility was opened up of new banking licences being granted, although the institutions created had to opt between commercial banking (like that existing at the time) or specialising in corporate banking (long-term corporate finance), which was basically industrial at the time. As could be expected, there were many candidates for obtaining these licences. Free opening of commercial bank branches throughout the country was granted in 1974. In the following two years, the number of commercial bank branches doubled.

As may be inferred from the above, banking competition was completely stifled by the structural regulation of prices, quantities and productive capacity. The Spanish banking market at the beginning of the 1960s could be characterised as oligopolistic. The barriers to entry for new domestic and foreign competitors ensured extraordinary profits for established institutions. As a result, the costs in terms of efficiency for the Spanish economy were very high, given that the lack of competition and the structural over-regulation prevented resources being allocated efficiently.[19]

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[18] An excellent explanation of the causes of the crisis and the resolution mechanisms is to be found in Juan (1993).

[19] These inefficiencies ended up convincing the authorities of the need to deregulate the Spanish banking system. This process began in urgency at the beginning of the 1970s. An assessment and the repercussions in terms of banking efficiency and solvency can be seen in Salas and Saurina (2002).

Capital requirements were based on a capital adequacy ratio, defined as the ratio between own funds and borrowed funds. In fact, it was a leverage ratio, bearing little relation to the risk incurred by institutions. The most important risk a bank faces is credit risk. Yet, such risk enters bank balance sheets on the assets side (although not all assets present the same level of risk), not on the liabilities side. The capital adequacy ratio was an instrument of very little use in ensuring that the banks had an adequate level of own funds.

Description of the crisis

Causes of the crisis

The 1978-1983 banking crisis affected more than 50 banks, around half of the commercial banks then existing and representing over a quarter of their total assets. The crisis began with the failure of small institutions and then, as time elapsed, it affected increasingly large banking groups. Finally, in 1983, the Rumasa crisis arose. Rumasa was a holding company that had 20 banks and a much larger number of non-financial companies among its holdings. The causes of this crisis, which was of systemic proportions, have generally been attributed to three factors: the economic crisis, poor bank management and a lack of adequate regulation.

The 1973 oil crisis, with lagged spillover effects on the Spanish economy due to unfortunate economic policy decisions, led to a major economic crisis in Spain. On top of the increase in costs generated by the rise in the price of energy came large wage increases, against a background of political transition, in which trade union pressures were more pronounced. The increase in costs resulted in high inflation. In this unfavourable setting, there was a fall in Spanish firms' sales, an increase in their costs and a substantial fall in profits. If the high uncertainty associated with the political transition is considered with the economic difficulties, it is easy to explain the substantial fall in investment, the closure of many firms and the need for far-reaching industrial restructuring. Unemployment also rose considerably. The expansion of the 1960s, based on the intensive use of labour and cheap energy as well as on a strong expansion of the property sector and of the industrialisation process, came to an end with the increase in costs, the difficulties of industrial firms (whose use of technology was hardly intensive), and the fall in the demand for housing prompted by the petering out of the migratory flows associated with the previous phase of rapid economic growth.

The second reason for the bank failures was poor risk management, manifesting in various forms. These included a very rapid growth of bank credit; high concentration of risks (in many cases in firms belonging to the banks' managers or main shareholders); highly speculative investments, particularly in the property sector; a policy of excessive expansion of the branch network from 1974; and, generally, a poor selection and monitoring of borrowers.

With the onset of economic crisis, the defective lending policy followed by these institutions translated into a substantial increase in default and doubtful assets. A growing portion of banks' assets stopped earning interest so that their profit and loss accounts began to suffer. Given the difficulties posed by debtors many transactions were refinanced, with outstanding interest becoming part of the principal of the new loan. This obviously did not solve the difficulties but delayed them to a later date. However, it did enable the effect on the accounts to be hidden. Although the share prices of these institutions began to weaken, some adopted share-price support practices through purchases of their own shares. This increased the volume of unproductive assets, aggravating the problems in the profit and loss account. To maintain profits and the dividend policy (avoiding further punishment by the market) many of these banks reduced their bad debt provisions and even changed their accounting principles,

using the accruals criterion to record income and the cash-basis criterion for payments, or even continuing to record interest accrued (but not paid) as financial revenues.

As the crisis spread the banks' problems grew. Some of them began to experience liquidity difficulties, which they resolved by short-term measures: increasing the remuneration of their deposits (even above the maximum permitted by regulations) or opening more branches (with the consequent increase in fixed costs) to attract a new customer deposit base. This led them into a vicious circle in which the liquidity needs worsened the profit and loss account (greater costs), resulting in further short-term measures. In the end, the institutions had accumulated such high actual losses that their capital was insufficient to cover them.

In some cases, fraud was committed. Funds were diverted from the banks to businesses owned by their managers or their main shareholders, or the latter simply acquired assets of the bank for less than their true value or sold assets to the bank at excessive prices. In addition, finance extended by the bank was, in many cases, used for speculative industrial or real-estate projects by firms of the bank's own group. The lending criteria in these cases were always much more lax than for other borrowers. On occasions, some banks had more than 50% of their balance sheet invested in loans to their own group. In fact, many of the new bank licences were granted to entrepreneurs who used deposits to finance the development of their industrial groups. Most of them lacked banking experience. This explains why the incidence of failures was particularly high among new banks set up from 1962 onwards and in banks that had changed owners. Moreover, many of the failed banks were industrial banks specialising in medium and long-term financing of industrial enterprises: the type of enterprise that was hardest hit by the crisis of the late 1970s.

The third factor explaining the banking crisis of the period 1978-1983 was the deficient regulation and supervision of the institutions. The root of the problems laid in the aforementioned entry of new banks during the 1960s. The high extraordinary profits being obtained attracted large numbers of entrepreneurs, many without any prior experience in banking, who wanted to participate in a highly profitable and stable business. In some cases, they were seeking cheap finance, in the form of bank deposits, for their own enterprises. No requirements were made at the time licences were granted for professionalism or integrity (they were assumed). Unfortunately, many bankers later demonstrate a lack of such qualities.

Regulations on doubtful assets and their provisioning were practically non-existent and, even worse, systematically violated by failed banks. The institutions classified doubtful assets, on which they were no longer receiving interest or principal, as healthy. The provisions for bad debts were clearly biased downwards. Although there was a Central Credit Register at the Banco de España, where exposures to customers should have been declared as well as whether or not they were non-performing, the institutions did not do so correctly, distorting their credit standards upwards.

The Banco de España, the body responsible for supervising the Spanish banking system, did not have a sufficient number of inspectors to assess the quality of the assets of the institutions and their correct provisioning. For the most part, inspectors were engaged in administrative tasks, verifying whether the institutions were complying with the regulations on interest rates, compulsory investment ratios, etc. Moreover, there were no mechanisms for intervening in problem banks.

How risk was manifested in the crisis

Undoubtedly the most significant risk was credit risk. Institutions failed because their losses on doubtful and unrecoverable assets exceeded their capital, in some cases two or three

times over. Credit risk was aggravated by the concentration of the risk of the loan portfolio in the group to which the institution itself belonged.

Market risk was not a decisive factor in the bank failures because interest rates on many transactions continued to be regulated. This helped keep the rates on most bank liabilities at low levels, which meant that they continued to be a significant source of income and profit for those banks that did not fail. Share prices were hit during the period, but although there were banks with strong industrial portfolios, they did not face any serious problem.

Liquidity risk manifested in many of the failed institutions. This was, above all, a symptom of the difficulties. In fact, the banks had serious solvency problems, which resulted in short-term liquidity difficulties. The growing amount of unproductive assets and the strong increase in costs have already been mentioned. Banks were already not generating enough income to meet their costs, but the underlying problem was one of insolvency.

Operational risk manifested in the form of fraud, committed by the managers of certain institutions who diverted funds from the bank to their own private businesses or who made purchases and sales which entailed losses for the bank and gains for themselves. This risk was also present in the Banesto crisis in 1993.[20]

How was the problem resolved?

The size of the problem meant that the crisis was systemic in nature. Moreover, given the difficult political situation in Spain, it was not feasible that the banks would simply be allowed to fail. Had this occurred, depositors would have panicked and many solvent banks would have been in serious difficulties. It should be noted that it was not until 1977 that a deposit guarantee fund (DGF) was created in Spain to cushion the negative impact of failure on small depositors.

In 1978, in response to the crisis, a decision was made to set up an *ad hoc* vehicle - Corporación Bancaria (financed 50-50 by private banks and the Banco de España). This body, which in 1980 was merged with the DGF, took control of the banks (normally in exchange for the symbolic amount of one peseta), valued their actual losses, reduced their capital to zero (against such losses), so penalising the incompetent shareholders and, subsequently, increased their capital subscribing for the new shares itself. This made it possible to restructure the banks, selling off the marketable assets and recovering anything recoverable, until a purchaser was found or the bank was wound up (in an orderly fashion). The purchaser usually acquired a sound bank, the DGF paying for the process by purchasing the bank's assets at book value, which was well above their real value.

This mechanism was used for all the banks experiencing difficulties, except in the case of Rumasa, which clearly exceeded the capacity of the new DGF, even after absorbing Corporación Bancaria. This holding company, which controlled twenty banks and some three hundred non-financial corporations, was temporarily nationalised. An *ad hoc* rescue plan was put into action, which included the issuance of government debt and a contribution from the major Spanish banks. After a short period in state hands, the banks of the group were sold off separately to the major Spanish banks.

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[20] That crisis was also the result of an unfavourable macroeconomic setting, with a very pronounced recession and rapidly deteriorating situation, together with a ruinous lending policy by the bank (excessive lending growth and high concentration of transactions with the bank's own industrial group).

In short, the solutions adopted meant that depositors did not lose their savings and that the cost was largely borne by the taxpayer. In the case of the small banks that failed in the 1990s, they were either acquired by other institutions, with no loss to depositors, or they were wound up, with the DGF paying compensation up to the maximum level stipulated.

What were the regulatory responses?

The 1978-1983 crisis had a profound impact on the design of new banking regulations in Spain and on banking supervision practices. In 1985, the ineffective guarantee ratio (of equity to debt) was replaced by a modern capital ratio. From that date, the level of capital required was the larger of two amounts: on the one hand, the capital resulting from multiplying different groups of the bank's assets by their corresponding weight, and on the other, 5% of total assets. Assets were classified into six different risk groups, each being assigned its own capital requirement. It is worth noting that this solvency ratio was three years ahead of the 1988 Basel Accord, although the weights were slightly different.

Previously, the accounting rules had been amended to establish a more detailed and stricter definition of doubtful and non-performing loans and of the specific loan loss provisions necessary to cover the losses thereon. From 1982, these amendments were fully in force, substantially reducing banks' discretion when classifying assets. In 1987, a general provision was added to the former specific provisions.

The tightening of capital requirements and provisions was supplemented by other measures that strengthened the regulation and supervision of the Spanish financial system. First, the procedure for granting banking licences was improved considerably, with requirements for minimum capital and, above all, evidence of professional experience and good repute, on the part of both the managers and the main shareholders of the institution. The acquisition of significant parcels of shares (higher than 5%, or 10%, or 15%, …) were made subject to prior approval by the Banco de España. It was thereby sought to avoid shareholders of doubtful repute and professional experience, or with unclear interests, from taking control of deposit money institutions and using them for their own ends and against the interests of their depositors. Also restrictions on concentration of risk were established, in the form of limits according to the capital of the institution, whereby to exceed such limits would require fresh capital. These restrictions were stricter in the case of lending to entities forming part of the bank's own group.

Law 26/1988 on Discipline and Intervention of Credit Institutions converted the Banco de España clearly into the backbone of supervision of the Spanish banking system. A set of offences was defined (including ongoing insufficiency of capital, the obstruction of supervisory activity and accounting irregularities) and, for the first time, penalties were established that could be applied to the managers of banks. This closed the loophole revealed by the previous banking crisis when supervisors uncovered irregularities but offenders could not be punished. This law also envisaged for the first time the possibility of intervening in banks displaying problems of solvency, liquidity, stability or effectiveness of capital. In fact, it was used to intervene in Banesto in late 1993, with the replacement of its Board of Directors and the organisation of a rescue operation.

Conclusions

In the views of the authors, had Spanish regulation and supervision anticipated the Basel Committee on Banking Supervision' "*Core Principles for Effective Banking Supervision*" by 20 or 25 years it would have been almost impossible for a banking crisis to occur with the

causes and dimensions of that suffered in Spain between 1978 and 1983. In fact, a large part of the regulatory changes made in Spain since the crisis have clearly been in the direction of the Core Principles enunciated in 1997.

In particular, the requirements for the granting of banking licences and for changes in ownership (Principles 2 to 5) would most likely have avoided the entry of unqualified managers into the Spanish banking system as well as making it extremely difficult for industrial groups to acquire banks to finance their own businesses. The references to the establishment of prudent and appropriate minimum capital adequacy requirements, reflecting the risks incurred by the bank (Principle 6), the correct evaluation of assets and of the adequacy of loan loss provisions (Principle 8), together with priority attention to the concentration of exposure (Principle 9) and to lending to managers or significant shareholders (Principle 10) would have avoided many shocks and saved a large amount of taxpayers' money.

Having adequate internal control systems (Principle 14) would have eliminated, or at least hindered the irregularities and fraudulent operations that were committed by many bank managers to the prejudice of the institution and to their own benefit. Finally, the power to intervene in or even revoke the banking licences of institutions (Principle 22) might have limited the losses to the taxpayer by enabling earlier intervention in many banks.[21]

The need for capital requirements to reflect more closely the risks incurred is also important. In fact, the 1985 Spanish capital ratio attempted to discriminate on a substantive basis between types of asset, to reflect the different levels of credit risk. Anything that tends to bring regulatory capital into line with economic capital will help to strengthen the solvency of banks. The correct measurement of risk would enable it to be better managed.

It is also important that capital requirements should cover operational risk, including fraudulent operations. This risk is nearly always present in banking crises of some size and its coverage with capital should help reduce it.

Early intervention by the supervisor has proved an effective mechanism for containing the problems of banks in trouble and, ultimately, of limiting the losses to the taxpayer. Tying dividends, the opening of branches, the entry into certain businesses, etc. to the level of capital (in relation to the risk) is a way of making the intervention of supervisors more objective and of giving it content. Although the Banesto crisis involved losses to the taxpayer, the impact was fortunately limited. The possibility of intervention (and its use by the supervisor) offered by Law 26/1988 was clearly a factor in the limitation of the damage.

Finally, two elements that have been very important in the Spanish crises should not be overlooked. First, the concentration of risk, especially within the bank's own group, must be taken into account, owing to the damaging impact that this has had in the past. Second, without prejudice to the need for adequate risk measurement, it should not be forgotten that it is always necessary to verify the completeness of banks' assets, their correct valuation and the existence of adequate provisions to cover any value losses that are already apparent, as well as the level of risk incurred.

Related to this latter aspect, there are signs of growing consensus[22] on the need for the specific provisions maintained by institutions (which are very cyclical by definition) to be

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[21] However, choosing the right moment to intervene in an institution is not at all easy for the supervisor.

[22] See, for example, Crockett (2001) or Borio and Lowe (2001).

supplemented by dynamic provisions to cover latent risk, which would be counter-cyclical by construction.[23] Although dynamic provisions arouse some suspicion among accounting authorities, from the prudential point of view they are an appropriate mechanism for strengthening a banking system's medium-term solvency. Adequate transparency in their operation should help to dispel the suspicion.

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[23] An example of these provisions is the Spanish statistical provision, explained in detail in Fernández de Lis et al (2000).

The Swedish Banking Crisis

Summary

In the early 1990s, Sweden went through a severe banking crisis. A massive government rescue operation was required to prevent the collapse of the financial system. Support amounting to 4% of GDP was given to the banks. Because the government guaranteed that all Swedish banks would meet their obligations in a timely manner, no bank actually failed during the crisis. The Swedish banking crisis was relatively quickly resolved. Within four years, the Swedish banking system as a whole showed positive profits again.

Prior to the crisis

Banking industry characteristics

Before the crisis, the Swedish banking industry underwent large structural changes partly as a response to deregulation. Before the 1980's, the financial sector in Sweden was heavily regulated. There were few alternatives to borrowing from banks. Banks were subject to limits on the interest rates they could charge and on the amount they could lend to private persons and to companies. Foreign banks were not allowed to operate in Sweden and there were heavy restrictions on foreign exchange transactions. The Swedish banking system was relatively fragmented with many small saving banks, but also some quite small commercial banks. However, due to the above-mentioned regulations there was very little competition among banks.

In the 1980's, the development of new institutions and markets started to accelerate, partly as a response to the heavy regulation of banks. Non-bank financial institutions started to arrange financing for companies and households. Since these institutions did not collect deposits, they were initially not subject to regulation. In 1988, lending by finance companies was a sixth of the lending by banks.[24]

Regulatory regime

In the period from 1980 to 1985, domestic quantitative restrictions were gradually abolished. However, the foreign exchange restrictions remained until 1989. Sweden had a fixed exchange rate regime with regulations on capital flows. The regulation of non-bank financial intermediaries increased, though they were still less regulated than banks.

During the 1980´s, supervision was focused on consumer protection issues in relation to the development of new financial institutions and markets. Because of this focus, the number of bank examinations was reduced. Most of the staff of Bankinspektionen (the authority responsible for supervising banks at that time) were lawyers, with few economists who could evaluate the risks in the banking sector. There had been little need for risk evaluation while the banking sector was heavily regulated. Bankinspektionen had just to check whether the banks fulfilled legal requirements, such as reporting their accounts to the authorities. Not

[24] Sweden: Credit and Foreign Exchange, Sveriges Riksbank, 1988.

enough was done to change the competence of the supervisory authority in connection with the deregulation.

Capital regime

Capital requirements were gradually increased during the 1980's and harmonised among financial institutions. Sweden introduced the 1988 Basel Accord capital requirements on 1 January 1990. There was a transition period, but by the end of 1992, the rules had been fully implemented. Earlier, different types of financial institutions had very different capital requirements. The banks had requirements based on their assets, while other institutions only had restrictions on their overall capital structure. The assets of banks were divided into four categories based on risk: the category with the lowest risk had zero capital requirements, and the category with the highest risk had a capital requirement of 8%. The two categories in between had requirements of 1% and 4% respectively. The highest risk category consisted mainly of unsecured credit. The overall capital requirement was thus lower than 8%. The introduction of the Basel Accord resulted in overall higher capital requirements for all financial institutions, and especially for mortgage institutions. Among the banks, the new requirements were especially tough for the saving banks. Some of the saving banks had to more than double their capital.

Macro-economy

During the 1980's, Sweden experienced a protracted economic upswing. The Swedish Krona was devalued twice (in 1981 and 1982) and inflation was relatively high. The tax system favoured borrowing instead of savings, especially in times of high inflation. As a result, there was strong pent-up demand for credit when the lending restrictions were abolished and the volume of credit increased rapidly (see Figure 7). The banks were faced with a completely new environment, and they did not have systems for controlling the new risks. They focused much more on market shares than on risks, which exacerbated the increase in the credit volume.

A large share of the loans went to investors in housing or commercial real estate and most of it was collateralised by real estate, which put an upward pressure on real estate prices. High real estate prices led to higher asset and collateral values, which facilitated borrowing and in turn increased the upward pressure on asset prices. As a result, especially in metropolitan areas, real estate prices rose very quickly (see Figure 8).

Figure 7: Lending as a percentage of GDP

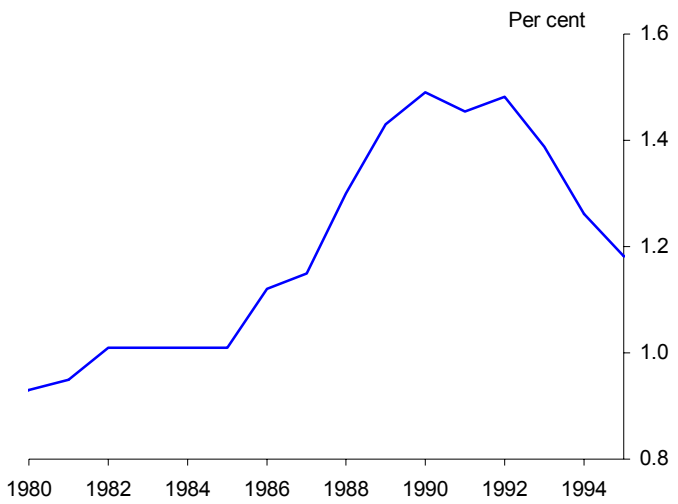
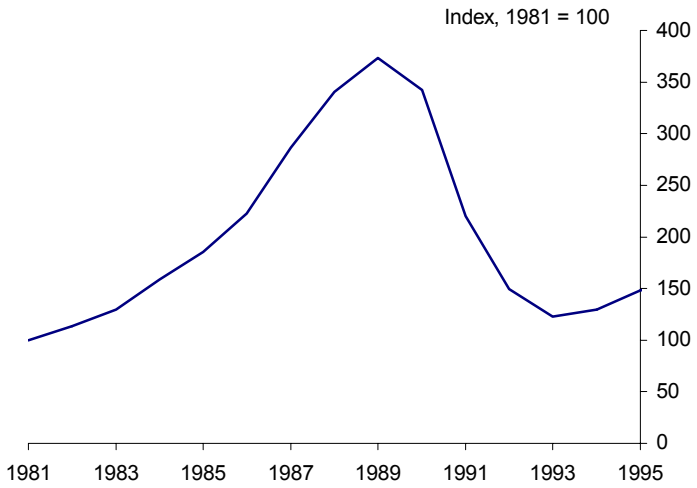
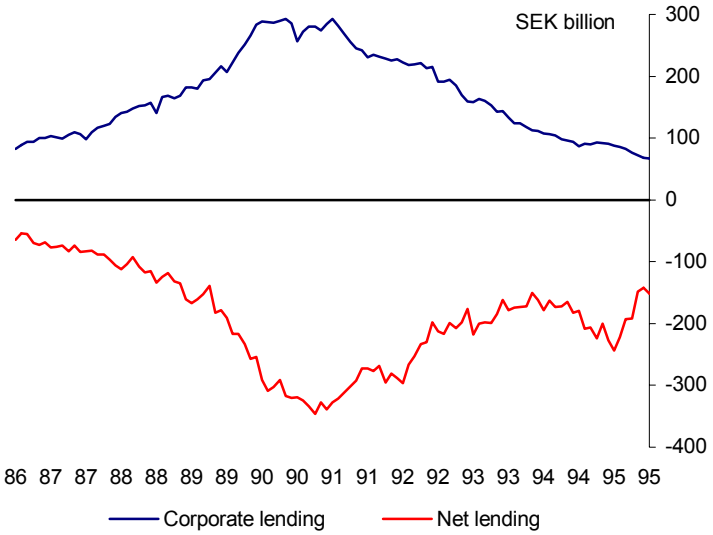


Figure 8: Developments in real prices on commercial property in metropolitan areas



Nominal interest rates were relatively high in Sweden compared to other countries. When foreign exchange restrictions were lifted, debtors saw new opportunities to borrow from banks in foreign currency at what they perceived to be low interest rates. Banks funded loans denominated in foreign currency mainly in the international interbank market, which led to a mismatch of maturities in loans and funding in foreign currencies, exposing banks to large liquidity risks as well as currency-linked credit risk (see Figure 9).

Figure 9: Corporate lending in foreign currency and net lending to foreign banks



Description of the crisis

Around 1990, the period of strong economic growth ended. Significant problems developed in the housing-market and rents started to fall. In 1991, decreasing demand for premises resulted in a substantial slump in prices, and within 18 months, property prices had fallen by more than 50% (see Figure 8). Interest rates rose and inflation fell, as the government supported a strong and successful anti-inflationary policy. Moreover, tax reforms increased the incentives to save. The combination of new tax laws, high nominal interest rates and low inflation sharply increased real interest rates.[25] For three consecutive years, Sweden experienced negative growth rates.

The recession, combined with the rapid depreciation of real estate prices, caused large credit losses for financial institutions. The first to be affected were finance companies. They had typically provided loans against the upper range of the value of assets pledged as collateral. Because of regulations that hindered them from issuing obligations and other long-term debt instruments, the finance companies were mainly financed with short-term commercial paper. As uncertainty about the financial situation of the financial companies increased, the commercial paper market ceased to function and the crises for many finance companies became acute.

The problems in the finance company sector had a direct impact on the banks; banks provided part of the financing of the financial companies, and banks owned many of the finance companies. By lending through financial companies, banks could circumvent exposure limits.

As the weakening of the economy and the property market continued, banks incurred increasingly larger losses, and in the autumn 1991, it became clear that two of the major Swedish banks needed an infusion of capital in order to fulfil the capital requirements which

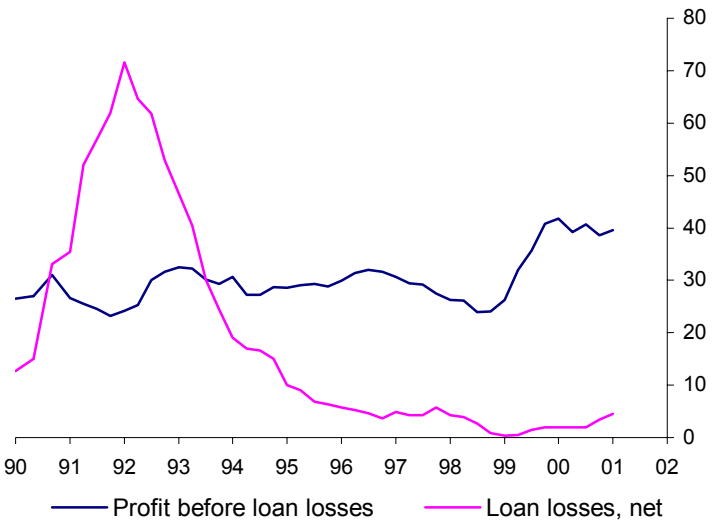
[25] The real after-tax lending rate rose from around -5% in 1980 to approximately +8% in 1994.

were going to be applied at year-end 1991. Hence, the new capital requirements forced the government to intervene earlier than it otherwise would have done.

During 1992, the economic situation in Sweden worsened. In connection with the European currency crisis, the Riksbank was forced to raise short-term interest rates sharply. Initially, this led to serious problems in the financial market for housing securities. The problems then escalated when foreign lenders cut their credit lines to Swedish banks, creating a liquidity shortage and a shortage of foreign currency within the financial system. In November 1992, the Riksbank abandoned the fixed exchange rate policy, and the Krona depreciated by more than 20% within a quarter. As a result, the number of bankruptcies and credit losses for banks increased further as many borrowers were no longer able to repay their loans in foreign currency.

To conclude, the crisis mainly developed because of credit risk and concentration risk, but it became acute due to the manifestation of liquidity risk.

Figure 10: Profit before loan losses and loan losses, net in the major banks, aggregate over four quarters (SEK billion, 1991 prices)



Resolution of the banking crises

The problems experienced by the *finance companies* in 1991 were not regarded as a threat to the payment system or the credit supply. Therefore, the government saw no need for intervention. In many cases, financial settlements were achieved between the owners and the banks, but in a number of cases, companies were forced into bankruptcy.

However, the fact that some *banks* would not fulfil the capital requirements was considered a major threat. In order to prevent serious repercussions in the payments system, the government deemed it necessary to cooperate in the reconstruction of the banks. When the nature and possible extent of the losses was gradually recognised in the market, the government found it necessary to issue a general guarantee that banks (and certain other credit institutions) would meet their obligations in a timely manner. The Riksbank deposited part of its reserve of foreign currencies in the Swedish banks to avoid a credit crunch. Much effort was also put into providing information to the financial markets about the guarantee and the measures taken to resolve the crisis.

By the end of 1992, a separate institution under the Ministry of Finance - the Bank Support Authority (BSA) had been created to handle the crisis. The aim of the BSA was to analyse applications for bank support and to grant support from the government. It was also decided that the BSA should take an active part in reconstructing banks. Among other things, the BSA created special asset management companies to handle bad bank assets. The main motive for separating the management of bad loans from other operations was that the bad loans called for specialists in liquidation procedures and real estate management. Moreover, with appropriate performance targets for the healthy operations and the work-out unit respectively, the separation was believed to provide better economic incentives.

New laws were made to clarify the circumstances under which support could be given. The law also stated the rights of the BSA. Among other things, the BSA was given the right to buy the shares of a problem bank against its shareholder's will, if the shareholders had not accepted support on terms that were deemed to be fair by a special panel of lawyers. The law stated that the price at which the BSA was allowed to buy the shares should reflect the value of the company that would prevail if it had not received any support from the state. The aim of this law was to avoid owners and managers of banks that were "too big to fail" being able to blackmail the government into granting concessions to which they were not entitled.

The crisis was resolved relatively quickly. By 1994, the Swedish banking system as a whole showed positive profits again. Among the factors contributing to the resolution of the crisis in an important way was the change in the exchange rate policy. The total amount paid by the BSA to the banks was SEK 65 billion. However, part of that money, was paid back to the government through dividends, selling of shares, and the value of retained shares. Jennergren and Näslund (1997) have estimated that the final bill to the taxpayer was SEK 35 billion (2.1% of GDP in 1997).

Regulatory responses

Supervision was strengthened during the crisis, as well as afterwards. The supervisory authorities responsible for supervision of different financial sectors were merged into one authority, the Swedish Financial Supervisory Authority (SFSA). The SFSA has put a lot more emphasis on risk control issues than its forerunners, and the resources devoted to the SFSA have increased over time.

Following the EU directive (92/121/EEG), Sweden introduced rules limiting banks' exposures to individual borrowers. Moreover, the regulation of financial groups was changed limiting the ability of banks to circumvent regulation by establishing daughter companies. The focus of supervision also changed from individual banks to financial groups.

However, there was still a great need to reform the legislation. In 1995, a government committee was set up with the remit to develop a new regulatory framework that would both help to reduce the risk of future banking crises and set out more clearly how a banking crisis should be managed should one still strike. The committee has proposed a fundamentally revised system for regulation and supervision of banks and other credit institutions under normal conditions, and a new regulatory framework for managing and resolving financial crises.

Regulation and supervision under normal conditions

The committee concluded that the risk of systemic crisis is best countered by ensuring that individual banks have sufficient soundness to withstand various forms of disturbance. To

achieve this goal of solid banks, the committee recommended the adoption of three main provisions setting out a framework for banking business in the form of rules on solidity, risk management and transparency. One key principle behind the recommendations is that the banks should be required to maintain sufficient control over the risks associated with their business such that their survival is not jeopardised. The risk exposure throughout the business should be tailored to the bank's capital strength in such a way that the bank's ability to meet its commitments is not jeopardised. This means that a risky business could require more than 8% capital. How much capital a certain business would require should, according to the proposal, be determined by the SFSA.

A new regulatory framework for managing and resolving financial crises

The system created to handle the banking crisis was temporary and was dismantled in 1996. The special laws were abolished and the Banking Supervisory Authority was turned into the Deposit Insurance Agency.[26] The committee concluded that a permanent crisis management system to supplement regulation and supervision under normal conditions was needed. The management of the Swedish banking crisis proved a success; the acute financial crisis was relatively short-lived and does not appear to have had serious repercussions for the real economy. However, important for this success was the broad political consensus on the need for far-reaching action to save the Swedish payment system and to avoid a severe credit crunch. Moreover, the crisis developed rather slowly, so the government had some time to design and implement its response. This was especially important in a situation where measures had to be improvised without any guiding precedent or regulatory support. The committee concluded that there was no guarantee these circumstances would prevail next time, and therefore a system needed to be in place.

The committee recommended a special scheme for the reconstruction and winding-up of banking companies in distress (public administration) and that a separate government body should be created to assume overall responsibility for this scheme. In this way, the division of responsibilities between the government and the central bank would be more clear cut. The introduction of the public administration rules should serve as a credible endpoint for future negotiations between the government and bank shareholders by which blackmailing could be avoided. One key element in this scheme was that the bank must be able to continue trading while in administration in order to avoid systemic risk and the destruction of value. However, if the bank is not worth rescuing, it should be allowed to go into bankruptcy and liquidation in the normal manner, when the Crisis Management Authority believes that this will be possible without affecting the stability of the financial system. Public administration thus is intended not to replace but to supplement ordinary bankruptcy and liquidation laws.

Conclusions

Much work has been done analysing the Swedish banking crisis (a list of references in English follows).[27] The aim of this paper has been to see what lessons regarding the regulation and supervision of banks can be learnt from the Swedish banking crises.

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26 At the time when the crisis erupted, Sweden did not have deposit insurance. Following the EU directive (94/19/EG), Sweden introduced deposit insurance in 1995.

27 Much of the literature on the Swedish banking crisis is naturally in Swedish.

One important lesson is that capital requirements cannot eliminate the risk of financial crisis emerging, but the existence of capital constraints forces the government to intervene earlier than it otherwise would have to do, which may reduce the resolution costs. Another lesson is that it is important that banks have control of their risks and that the supervisory authority comprehends the risks involved in the banking business, otherwise risks may build up in the banking sector. However, even with the very best risk control systems, a financial crisis could arise. It is true that neither banks nor the supervisory authority in Sweden at the time were actually capable of evaluating risks in a deregulated system. However, the Swedish banking crisis was one ingredient in a general economic crisis in Sweden. It is therefore not possible to conclude that the crisis would have been avoided if the banks had had better risk control systems and the Swedish Financial Supervisory Authority had had better understanding of these systems.

Capital requirements and risk control systems play an important role in *preventing* financial crises, but they need to be complemented with a regulatory framework for managing and resolving financial crises, as it is not possible (at least not without very high social costs) to eliminate the risk of bank failure. Imposing capital constraints on banking activities involves social costs (see e.g. Diamond and Rajan (2000) and Gorton and Winton (2000)). Hence, there is a trade-off between stability and efficiency. The presence of an efficient crisis management system that reduces the costs of bank failure implies that less emphasis on crisis prevention is needed. At the same time, an efficient crisis management system that makes it possible to ensure that bank shareholders will lose their stakes whenever a bank needs official support, can help prevent crises by reducing moral hazard problems. One lesson from the Swedish banking crisis is that it is helpful to have a regulatory framework that allows the government to write down the value of bank shares against the shareholders will. If there were such a framework in place, shareholders would have greater incentives to reduce the probability of failure.

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The Swiss Case

Summary

Following a strong real estate market boom during the 1980s, a sharp decline in real estate prices combined with a general macroeconomic slowdown adversely affected banks' loan portfolios in Switzerland. Between 1991 and 1996, banks incurred estimated losses of around CHF 42 billion (roughly 8.5% of the total loan volume or more than 10% of Swiss GDP). While almost half of all regional banks disappeared during that period, only a single bank had to be liquidated. All other regional banks that experienced problems merged with stronger banks. Only five state-owned cantonal banks received taxpayers' money.

Banking industry characteristics

A key feature of the Swiss banking system is its segmentation. There were 371 banks operating in Switzerland as at end-2001, of which 219 were domestic banks, 126 foreign subsidiaries and 26 foreign branches. The banks operating in Switzerland can be classified into five, highly heterogeneous segments:

- Big banks, UBS and Credit Suisse Group (CSG): large and complex financial institutions that operate globally and offer a broad range of products.
- Cantonal banks: these 24 banks are in part or in full owned by the cantons. They focus on domestic retail banking. However, some of the larger cantonal banks are active in a wider range of banking activities.
- Regional banks: regional banks engage mainly in domestic retail banking activities and mainly serve their local area. They account for about 3% of Swiss banking assets.
- Raiffeisen banks: these credit cooperatives focus on mortgage lending in rural areas, though recently they have been expanding into the main cities. They account for about 3.5% of Swiss banking assets.
- Private, brokerage and foreign banks: these banks are engaged primarily in portfolio management.

Swiss banks must provide for an adequate relationship between their equity and their total liabilities. The Swiss regime adopts the Basel rules. The sum of core capital, supplementary capital and additional capital is deemed to constitute equity. In Switzerland, the major banks are characterised by good capitalisation, asset quality profitability and liquidity. As a system, the Swiss banking industry recovered well from the collapse in the property market and the recession of the early 1990s.

In Switzerland, the Swiss Federal Banking Commission (SFBC) is the statutory authority for the supervision of banks under the provisions of the Banking act and subsidiary legislation. The SFBC has traditionally relied extensively on the work of licensed external bank auditors. Therefore, Switzerland has the so-called "dualistic system".

Description of the crisis

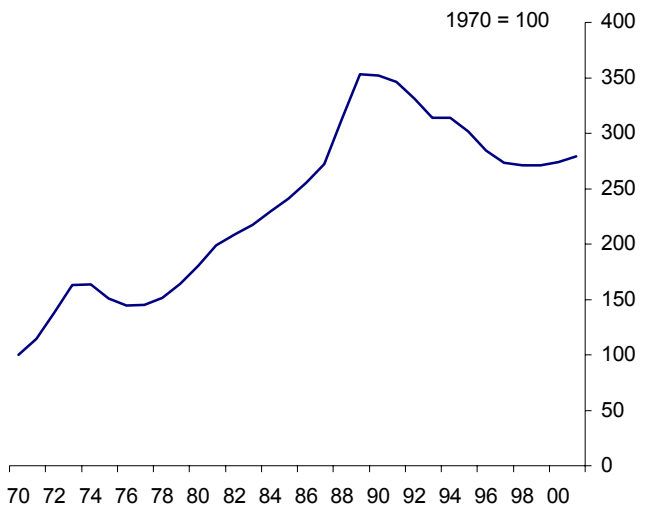
Causes of the crisis

In the 1980s, the Swiss real estate market boomed and prices rose sharply. No composite real estate market price index exists for Switzerland, but there are sub-indices for different real estate markets. In particular, there are data on office space prices, single home prices and on owner-occupied flat prices. Data go back to 1970 and show that:

- The price index for single homes doubled during the 1980s. The price index for office space followed the same pattern, but rose even more sharply. The indices moved in a similar way, but some differences may be observed.
- The index for housing peaked in 1989 and remained high until 1991, when housing prices started to fall. They then fell continuously until 1999. In 2000, housing prices began to rise for the first time in ten years.
- Prices for office buildings moved - as mentioned - in a similar way. However, the peak in prices was in 1991, two years later than the peak for single homes. The price decline went on until 1998. In 1999, office space prices began to rise again.

To sum up: in Switzerland real estate prices rose sharply in the 1980s and peaked in 1989 or early in the 1990s (depending on the sub-index). In the 1990s, prices declined again to levels that had been reached in the mid-1980s. As prices sank, the traded volume also plunged (see Figure 11).

Figure 11: Real Estate Market: Single Homes (4-6 Rooms)



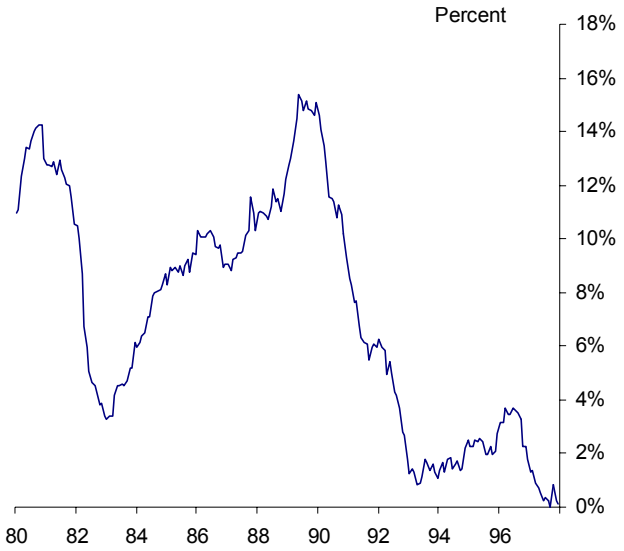
The real estate crisis was part of a broader macroeconomic boom and bust period in Switzerland. The whole economy showed high growth rates in the 1980s, followed by an unusually long recession in the 1990s, which led to high unemployment rates and impaired the health of the Swiss banking system.

The Swiss mortgage market

In Switzerland, banks play a prominent role in financing real estate and the mortgage market is large relative to the population. The Swiss per capita mortgage indebtedness is high by international standards.

Table 1 shows that the rise of real estate prices was reflected in the evolution of mortgages held by Swiss banks. As it is not certain that all real estate financing was through mortgage lending, it is useful to also look at the broader aggregate of total domestic loans. The aggregate data (*total* domestic loans) as shown in Figure 12 display a similar pattern to real estate prices.

Figure 12: Growth rates: Total domestic loans (1980-1995)



The total amount of mortgages more than doubled in the 1980s and mortgage growth was even higher than that of real estate prices. It is therefore likely that the real estate boom was mainly financed by the banking system.

Table 1

Total domestic mortgages by Swiss banks

Year	Swiss Francs (bns)
1981	154
1982	167
1983	179
1984	194
1985	213
1986	234
1987	261
1988	294
1989	334
1990	363
1991	382

The most important factors that contributed to the high level of mortgage financing are the following:

- In Switzerland, interest payments on mortgages and other forms of debt may be deducted from taxable income. In Switzerland, the personal income tax is supplemented by a tax on aggregate household wealth. To calculate the wealth tax, total debt may be deducted from total assets. This also contributes to the high ratio of real estate financing by mortgages.
- Amortisation is not mandatory for the majority of mortgages. Furthermore, Swiss banks typically tolerate high lending limits. In the 1980s, 80% to 100% loan-to-value ratios were common.
- Historically, real and nominal mortgage rates have been low in Switzerland. Until the end of the 1970s, this was partly explained by the policy of the SNB to control interest rates of bank-issued medium-term notes and, therefore, indirectly of mortgage rates. However, in 1981, interest rate controls were abolished.
- Due to a shortage of land and high construction costs, real estate prices have risen at a rate of 10% per year on average since 1960. This increase accelerated temporarily in the late 1980s. Swiss zoning laws further led to a shortage of land to build on.

In Switzerland, banks are the dominant suppliers of real estate financing. Mortgage banking has traditionally been one of the core businesses of cantonal banks, regional banks, Raiffeisen banks, and of the big banks in the 1970s and 1980s. The average ratio of outstanding mortgages to total assets was about 30% for all banks. The peak ratio of 36% was reached in 1991.

The banking crisis

In 1991, when real estate prices began to fall again, some banks ran into problems, with pressures on both sides of their balances sheets. On the assets side, the recession adversely affected the ability of bank customers to service their debts. This was particularly true of customers in the small-business and household sector. Falling real estate prices and high lending limits implied that the collateral no longer covered the total amount of the mortgage or the loan. Banks had to write off large sums. On the liabilities side, banks faced mounting problems to finance their mortgages with savings deposits, bank issued medium-term notes and central mortgage bonds. A gradual withdrawal of this type of funding was observed as customers shifted to regular bonds, equity and mutual funds.

The Swiss Federal Banking Commission (SFBC) estimated that the losses incurred by Swiss banks on their loans between 1991 and 1996 amounted to CHF 42 billion or roughly 8.5% of the total. The big banks alone wrote off CHF 30 billion or nearly 13% of their loan volume. In contrast, the Raiffeisen banks wrote-off only CHF 254 million or less than 1% of their total loan volume.

Table 2 shows that - at first sight - the big banks suffered most, as they incurred three quarters of the total loan losses. However, due to their well-diversified portfolios, the big banks earned sufficient profits out of their other businesses to cover the losses on their domestic loans. They were strong enough to write off the non-performing loans quickly. In contrast, the regional and cantonal banks, which focused on the domestic loan business, suffered most from the banking crisis in the 1990s. Exceptions were the Raiffeisen banks that focused on domestic lending, but were not saddled with a significant problem of non-performing loans.

Table 2

Swiss banking industry: reserves and losses on domestic lending (in CHF million)

	Average domestic loans outstanding 1991-95	Loan loss reserves 1991	Loans loss reserves 1996	Cumulative domestic loan losses 1991-1996	Cumulative losses / domestic loans 1991-1996
Big banks	240,105	2,771	19,274	30,129	12.6%
Cantonal banks	188,313	2,248	8,306	10,536	5.6%
Regional banks	33,882	300	1,041	1,337	4.0%
Raiffeisen-banks	37,770	22	163	254	0.7%
Total	**500,070**	**5,341**	**28,784**	**42,256**	**8.5%**

Source: Swiss National Bank / Swiss Federal Banking Commission.

How was the problem resolved?

The regional banks, a group consisting of small locally based institutions ran into difficulties in the early 1990s. In October 1991, the SFBC closed Spar + Leihkasse Thun, a medium-size regional bank with assets of CHF 1.1 billion. The liquidation was accompanied by depositor losses, as the bank's assets could not cover outstanding liabilities. This closure was followed by a ‘regional banking crisis’. Nearly half of the 200 regional banks did not survive the crisis and lost their independence. They were taken over by big banks or cantonal banks or merged within their own group. The SFBC actively promoted a quick resolution of the crisis by taking four steps:

- Rapid closure of insolvent banks. The SFBC granted a two-week period to solve the problems of Spar + Leihkasse Thun. As no one was willing to take over the bank, the Swiss Federal Banking Commission closed it immediately.
- Task force ‘Banking Structure’: The Task Force organised takeovers for banks threatened by bankruptcy. To this end, the SFBC was assisted by (stronger) banks (especially the big banks and the cantonal banks). The Swiss Bankers Association and the Swiss National Bank also cooperated with the SFBC. About seven ‘cases’ were settled through the Task Force. If no takeovers could have been arranged, the Swiss Federal Banking Commission would have closed these banks too.
- Pressure by the SFBC: Banks that were likely to run into problems in the long-run were "forced" to look for a stronger partner. In this way, about 20 banks merged and gave up their independence.
- The SFBC helped to organise financial assistance through the Association of Regional Banks to cover potential loan losses.

The regional banking crisis was settled without resort to government financial assistance. Only the state-owned cantonal banks of Berne, Geneva, Jura, Solothurn and Vaud needed taxpayers’ money. The fiscal cost of resolution for these five cantonal banks combined was less than 1% of annual Swiss GDP. Overall, the banking crisis was resolved in an orderly fashion and in a short period. This was possible because the big banks in particular helped to solve the crisis by taking over weak institutions. The big banks were able to assist as they had a strong capital base and were interested in gaining new customers in regions that had formerly been dominated by regional banks. Furthermore, the authorities reacted quickly and the SFBC strove to solve the problems as rapidly as possible. The big banks knew that without the takeovers, the SFBC would have been legally obliged to close the insolvent

banks. Probably the big banks were willing to cooperate with the authorities because messy liquidations of insolvent banks might have impaired their own reputation.

What were the regulatory responses?

As a response to the regional banking crisis, the SFBC introduced an Early Information System in 1997 that brought the SFBC up-to-date on important balance sheet ratios, the profit and loss account, off-balance-sheet activities, and bad loans. The Swiss National Bank (SNB) created a Systemic Stability division in 2001. Further, the SFBC and the SNB have coordinated the collection of statistical data.

As a result of the crisis, a new law on bank insolvency was passed in 2003 with the purposes of (a) more efficient liquidation, (b) maximising the chances of successful restructuring, (c) better protection of small depositors.

Case Studies of UK Bank Failures

Summary

This section discusses three case studies of bank failures in the UK. The Bank of Credit and Commerce International (BCCI) failed in July 1991 because of widespread fraud. The Small Banks Crisis occurred in 1991-1992, when a number of small UK banks failed due to credit losses during a recession. The third case study is that of Barings Bank, which failed in 1995 because of fraud by one individual.

Bank of Credit and Commerce International

In July 1991, the Bank of Credit and Commerce International (BCCI), one of the 300 or so branches and subsidiaries of foreign banks operating in London, failed because of widespread fraud. BCCI's complex structure consisted of a holding company, incorporated in Luxembourg, and two main subsidiaries incorporated in the Cayman Islands and Luxembourg. BCCI had branches in over 70 countries with the UK offices being branches of the Luxembourg subsidiary. Its principal shareholders were in Abu Dhabi.

Regulatory Regime

It was recognised before BCCI's failure that its complex group structure made it difficult to conduct effective supervision and auditing. Under the principles established by the Basel Committee, the Institut Monetaire Luxembourgeois (IML) was the lead regulator and was, in theory, responsible for consolidated supervision. But in practice, given the complex group structure, the fact that the operational head quarters of the BCCI was not in Luxembourg but in London and that 98% of the group's business fell outside its jurisdiction, the IML was unable to supervise BCCI on a consolidated basis. At the time, the Bank of England (BOE) was responsible for supervision of UK banks. Notwithstanding that BCCI's main wholesale business was conducted from the London offices, the BOE had no responsibility for the supervision of the BCCI group as a whole. Because of the complex structure of the BCCI group, in 1987 an eight-nation 'College of Regulators' was established to supervise BCCI activities.

Description of Crisis

It is now believed that BCCI's financial statements had been falsified from its establishment in 1972. A scheme of deception was developed to support BCCI's rapid growth and to conceal lending losses. To achieve this, BCCI failed to record deposit liabilities and created fictitious loans that generated substantial but fictitious profits. Fraud also took place within BCCI's treasury operations. Rather than using its own funds for proprietary trading, BCCI used depositors' money to fund their trading activities, when this trading resulted in large losses they were covered up with more fictitious loans.

Prior to these problems surfacing in 1990, supervisors and commercial bankers were wary of BCCI because of its rapid growth and opaque corporate structure. However, while BCCI was sometimes mentioned in the press "chiefly for the mystery that surrounded it"[28], financial market participants generally saw BCCI as a bank that had made losses through incompetence rather than fraud.

From the spring of 1990, concerns about the evidence of fraud within BCCI led to on-going discussions between BCCI's auditors (Price Waterhouse), banking supervisors and BCCI's shareholders. In 1991, Price Waterhouse became increasing convinced that the fraud within BCCI was endemic and that published financial statements were grossly inaccurate. In late June 1991, Price Waterhouse informed the BOE of their findings.

Resolution of problems

When the large-scale of BCCI's fraud was reported to the BOE a meeting of the eight-nation regulatory college was organised. On 2 July 1991, the membership discussed the timing of the shutdown of BCCI in order to minimise disruption to financial markets. As BCCI operated in many countries and time zones, it was difficult to find a time that was agreeable to all. In the end, BCCI was closed on Friday 5 July just before New York markets opened. Eligible depositors in the UK were compensated from the Deposit Protection Fund – within the limits of the scheme – and liquidators are continuing the process of the distribution of dividends to creditors after a complex realisation process and much litigation.

Regulatory responses and lessons learnt

A formal enquiry, conducted by Lord Justice Bingham, followed the collapse of BCCI. The BOE accepted Bingham's recommendations that led to: new legal and special investigations units being created within the BOE. These included: a review of arrangements for involving the Board of Banking Supervision (a statutory body established to advise the BOE in its supervisory role); improved communications within the BOE and between the Bank and relevant government departments; and better training of supervisors to enhance their alertness of fraud or malpractice.

From an international standpoint, the more important legacy of the Bingham Report was the attention that it drew to the prevailing shortcomings of the supervision of internationally dispersed banking groups and the importance of consolidated supervision. This resulted in a tightening of international supervisory standards[29]. The changes required that a host country, into whose jurisdiction a foreign bank was seeking to expand, would determine whether the bank and the group's home-country supervisor had the necessary capabilities to meet minimum standards laid down by the Basel Committee on Banking Supervision. The home authority should have: the responsibility to monitor banks' global operations on the basis of verifiable consolidated data; be able to prohibit corporate structures that impede supervision; and be able to prevent banks from establishing a presence in suspect jurisdictions. Other changes included improved 'gateways' for sharing information among supervisors, accountants and anti-fraud bodies, and a duty on auditors and other professional experts to report suspicions to supervisors. More generally, over the past decade there has been an

[28] Financial Times, 17 May 1978.

[29] This was formalised for EU countries in the post-BCCI directive.

increasing trend amongst national supervisors (and other relevant authorities) to share information on internationally active banks.

Conclusions

BCCI's failure was attributable to widespread fraud that was, at least initially, undertaken to conceal loan losses. In circumstances such as this, where financial statements do not reflect true financial health, reported capital ratios will also be misleading to investors That said, in cases such as this, the process of ongoing supervision may encourage banks to assess and improve their systems and controls.

Small banks crisis

Banking Industry Characteristics

In the early 1990s, the small and medium-sized banks consisted of over one hundred institutions, many of which specialised in lending to particular geographical regions, industrial sectors or ethnic/religious groups. Many of these small (and medium-sized) banks were heavily exposed to property lending and, to a lesser extent, to instalment credit and hire purchase lending. On the liabilities side, most of the banks were heavily reliant on wholesale funding.

Capital and regulatory regime

Before the introduction of the 1988 Basel Accord, the BOE already required UK banks to maintain minimum capital requirements. These capital ratios were set on a bank-by-bank basis and as the small banks tended to have relatively undiversified loan portfolios they were required to maintain capital ratios well above 8%. In June 1991, the median risk-weighted capital ratio of the small banks that would subsequently fail was 26%. This figure reflects the actual risk-assets ratios that in many cases were substantially higher than the minimum set. Work on the small banks' crisis later showed that very high actual risk-asset ratios were correlated with later failure possibly because it reflected weak market presence or caution on the part of the bank management in the face of higher risk.

Macroeconomic background and genesis of the crisis

Many of the small banks that would subsequently go on to fail experienced particularly rapid loan growth in the second half of the 1980s. With the benefit of hindsight, this marked increase in lending was an indicator of excessive risk taking. During the economic downturn of the early 1990s, many of these small banks experienced pressure on both sides of their balance sheets. The impact of the recession was particularly severe on the property market and this resulted in a marked decline in banks' asset quality and collateral values. Foreign banks, particularly those from the United States and Japan, became increasingly nervous about the depth and duration of the UK recession and reduced their sterling claims on UK banks from over $110 billion to $76 billion between end-1990 and end-1991. Local authorities – whose deposits made up 10% of the deposits at twelve smaller banks – were under pressure to become more discerning about where they placed their funds and some withdrew their deposits from the small banks. This trend was strongly reinforced in July 1991 by the BOE's announcement of the closing down of BCCI. First, BCCI's liquidation was a clear signal that the authorities were prepared to allow even relatively large banks to fail.

Second, there was a flight to quality away from small banks to the larger UK banks. Over the next three years, a quarter of the smaller UK banks failed in some sense.[30]

Description of crisis and resolution of problems

The first warning of problems was provided by the supervisors who had information on the pressures growing at the small banks. The supervisors produced weekly reports on a 'watch list' of banks that were most vulnerable, and whether they were systemically important. The BOE used its relationship with the financial markets, particularly the large clearing banks, to acquire quantitative and qualitative information to help assess the seriousness of the small bank problem and its likely systemic impact.

The small banks identified as problem cases were told to strengthen their liquidity or reduce their total assets given the reduction in lines to them. Their total assets declined by over 25% between end-1990 and end-1992. Three small banks – Chancery, Edington and Authority – were allowed to fail in early 1991. As the BOE did not consider such failures a threat to the financial system, no emergency support was provided at this stage.

Wholesale funding of the small bank sector continued to shrink during 1991, accelerated by the closure of BCCI. As the macroeconomic situation deteriorated one particular institution, National Mortgage Bank (NMB), ran into a liquidity crisis. The BOE decided to provide support to NMB and a small number of other banks, partly because the risks of contagion to other, larger banks were judged to have increased materially. Although a controlled counterfactual experiment cannot be run, it was thought at the time that if no action had been taken the liquidity crisis would have spread.

Regulatory responses and lessons learnt

There were no changes in regulatory or supervisory procedures in the wake of the small banks crisis. However, this crisis provides an example of how small banks may, in aggregate, pose a systemic threat if a large number of them are vulnerable to a common shock.

Conclusions

The UK small banks crisis was a situation in which banks with relatively undiversified loan portfolios experienced cyclical credit losses and a run on their deposits. It provides an example of how high capital ratios can be eroded within one or two years. Indeed the small UK banks that would subsequently fail were well capitalised in June 1991, as most had risk-weighted capital ratios well above the 8% Basel minimum.

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[30] Failure includes banks that entered into administration or liquidation, had their banking license revoked or received liquidity support.

Barings

Banking Industry Characteristics

At the time of its collapse, Baring Brothers was the oldest merchant bank in London. In addition to Baring Brothers & Company (BB&C), the two main operating companies of the Barings group were Barings Asset Management and Barings Securities Limited. BB&C was an authorised bank, based in London with branches in Singapore and Hong Kong. Barings Securities Limited (BSL) was incorporated in the Cayman Islands although its head office was in London. BSL had a number of subsidiaries one of which was Barings Futures Singapore (BFS) where the problem arose.

Barings is another example of how fraud can lead to bank failure. However, unlike BCCI (where widespread fraud was used to conceal loan losses and falsify financial statements), the failure of Barings was attributable to fraud by one individual (a form of operational risk). This combined with market risk and weak management systems made it possible for the large trading positions accumulated by this individual to go undetected for a long period.

Regulatory Regime

Barings' worldwide operations were subject to supervision by a number of authorities. The BOE authorised BB&C to take deposits and was responsible for the consolidated supervision of the group as a whole. BFS was a corporate clearing member of the Singapore International Monetary Exchange (SIMEX).

Description of Crisis

The Barings crisis was attributable to fraud committed by the head trader at BFS, Nick Leeson. He claimed to be arbitraging between derivatives markets in Singapore and Osaka. As Leeson controlled both the trading and the documentation of these trades he was able to disguise the growing position he was taking by having an important account excluded from daily management reports and by fixing, through fraudulent entries, this account to be zero on month-ends. He also falsified reports to SIMEX in order to reduce the required margin calls. The management structure at BFS was both complicated and at times uncoordinated. Different strands of management believed that each other were in charge of, and monitoring, Leeson's activities. There was a failure of internal controls to detect these problems and, as such, the fraud continued and multiplied as Leeson took increasingly risky positions in an attempt to cover up losses made on previous transactions.

Resolution of problems

In February 1995, Leeson's activities were discovered. Although it became clear almost immediately that the losses ran into hundreds of millions of dollars, it was not possible to tell just how large these losses were[31]. On the afternoon of Friday 24 February, Barings' senior management notified the BOE that its securities subsidiary in Singapore had made large losses on Japanese Government Bond and equity markets and held large uncovered options positions in the Japanese stock market (Nikkei index). Barings requested the BOE's support to assist with the winding down of these activities.

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[31] In fact, the losses amounted to $1.4 billion (three times as large as Barings' capital).

The actual amount of losses was not known immediately for two reasons. First, the fraudulent trader had tampered with the accounting records and so there was a general concern that the P&L statements were not reliable. A group of auditors had to recreate the transactions by investigating the trading journal entries on a trade-by-trade basis, a process that took time. Second, even if the exact number and type of transactions had been known, their value was uncertain as they could not be closed out until trading started again in Japan on the Monday morning (Sunday evening UK time). Private and public sector bankers involved in the winding down of Barings expected the Nikkei would fall between 5% and 10% when Barings' (very large) Nikkei positions became known.

The BOE's decision on whether or not to extend support had to be reached by the time trading started in Japan on the Monday morning local time (Sunday evening UK time) since insolvent institutions were barred from trading. The authorities therefore only had the weekend to determine their response. As the auditors' reports came in during the course of the weekend, it was becoming increasingly clear that the size of the losses probably rendered Barings insolvent. The question therefore arose whether or not the systemic implications of Barings' failure justified the commitment of public funds. The overall judgement was that since bilateral exposures were relatively limited and the source of Barings' failure was an isolated case of fraud the threat of contagion in the UK financial system, or more widely, was not large enough to justify the commitment of public funds. The BOE also liaised with the Japanese authorities because the failure of Barings was likely to have an impact on the Nikkei (and consequently on Japanese financial stability).

Against this background, the BOE invited private parties with a potential interest in seeing Barings continue as a going concern to consider providing liquidity support and/or purchasing Barings. Such institutions included other UK merchant banks worried about reputational contagion, UK clearing banks concerned about the reputation of the City of London and international investors who held similar positions to Barings in the Japanese market. It was not, however, possible to place a ceiling on the already large losses because of the uncertainty of additional losses generated when trading began on the Monday. Therefore, private sector support was not in the end offered.

Without a private buyer or the possibility of allowing Barings to trade the next day, Barings announced on the evening of Sunday 26 February (GMT), that it was seeking an administration order. Public sector support via the lender of last resort facility (LOLR) was not made available to Barings as it was thought that its closure did not pose a significant risk to financial system as a whole. However, fearing that the closure of Barings would cause a market disturbance, the BOE made public its willingness to provide adequate liquidity to the 'UK banking system'.

Regulatory responses

Following the collapse of Barings, the Board of Banking Supervision conducted an inquiry. It concluded that the collapse of Barings did not necessitate any change to the framework of regulation. However, it did find that the implementation of some existing arrangements needed to be improved. For example, the Board suggested that supervisors needed to better understand the non-banking businesses undertaken by the banking groups they were responsible for.

Lessons learnt

The failure of Barings highlighted a number of important lessons for senior bank managers including the importance of internal controls and audit processes. For central bankers and

supervisors, Barings demonstrated that the crisis resolution process might involve tight, immovable deadlines and incomplete information. The supervisors' relationship with Barings' senior management, senior management from other commercial banks and supervisors from other jurisdictions undoubtedly helped to expedite the resolution process. Barings also provides a good example of when transparency over the willingness to provide LOLR to other banks can reduce rather than accentuate panics.

Conclusions

The failure of Barings was attributable to a combination of fraud, market risk and inadequate internal controls. As was the case with BCCI, Barings demonstrated that even independently audited accounting information could be inaccurate.

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The US Experience

Summary

In the 1980s and early 1990s, the U.S. banking industry struggled through a difficult period, suffering the highest number of failures since the Great Depression. The Federal Deposit Insurance Corporation (FDIC) had to resolve roughly 1,650 federally insured banks. However, the problems of commercial banks pale in comparison to the plight of the savings and loans (S&L). The magnitude of the bailout cost of the 1,320 S&L institutions that failed during this period was enormous, totalling $151 billion or roughly 80% of the aggregate resolution costs. Because of this massive number of failures, regulatory agencies and policy makers had to take unprecedented actions to restore the financial health and stability of the banking sector.

Prior to the crisis

Banking industry characteristics

Throughout the 1970s, commercial banks and thrifts in United States operated in a highly fragmented and protective environment. At the end of the 1970s, there were around 14,430 commercial and savings banks, and 4,360 thrifts operating in United States. The presence of so many financial intermediaries was the result of state and federal regulations governing interstate and intrastate banking that essentially prohibited banks from branching nationwide. In particular, the McFadden Act of 1927 prohibited banks from branching across states and required all large national banks to conform to in-state branching rules. Another important rule was Regulation Q that was enacted in 1933, and prohibited banks from paying interest on demand deposits and put limits on rates paid on other deposit products.

Restrictions on branching and the barriers to interstate banking resulted in very fragmented financial intermediation and were blamed by many for fostering inefficient and less competitive small banks and thrifts. By the late 1970s, rising interest rates, financial innovation and technological advances slowly began to undermine the effectiveness of these banking restrictions. Limited by Regulation Q, depository institutions during this period were not able to offer competitive rates on deposits and lost market share to non-bank competitors (money market mutual funds and other non-depository financial institutions that offered more attractive services and products). The diminishing role of commercial banks and thrifts is illustrated by the declining market share of the amount of credit advanced by depository institutions. This process of *disintermediation* gradually eroded banks' cost advantages in raising funds and in providing loans, resulting in lower net interest margins and profits.

The economic conditions during the 1970s were also not very accommodating to financial intermediaries. Inflationary pressures that developed in the late 1960s and early 1970s compelled the Federal Reserve to take several policy initiatives. To combat inflation, the Federal Reserve decided to adopt a very tight monetary stance, driving interest rise to unprecedented levels. In 1979, the Federal Reserve also announced far-reaching changes in its operating techniques by shifting to targeting money and non-borrowed reserves instead of the Federal funds rate. Despite expectations that this new procedure would improve monetary control, interest rate movements during the early 1980s were extraordinary in their levels and volatility. The surge in the level and volatility of interest rates placed great pressure on financial intermediaries. The interest rate risk exposure was especially harmful

to S&Ls that traditionally invested in long-dated fixed-rate assets, such as mortgages and commercial real estate, but got their funding from short-maturity deposits.

To allow banks and thrifts to better compete in the new financial environment, legislators enacted the 1980 Depository Institutions Deregulation and Monetary Control Act (DIDMCA) and the 1982 Garn-St. Germain Depository Institutions Act (Garn-St. Germain Bill). An important aim of these two bills was to allow S&Ls to offer competitive interest rates and to help them compete more effectively against commercial banks. Thrift institutions were given the power to invest in a wider array of loans, corporate bonds, and state and government debt. At the same time, DIDMCA phased out Regulation Q and approved new deposit instruments for depositories, thereby enabling them to compete more effectively with money market mutual funds.

Factors contributing to the rise in failures in the 1980s

Against this backdrop, most banks in 1980 appeared to operate remarkably on a safe footing. The majority of banks were fairly well capitalised with an average equity-to-asset ratio of 9%. Capital requirements differed across banks according to size. Large money centre and regional banks were allowed to operate with capital-to-asset ratios as low as 4% with no mandatory minimums for multi-national banks. In 1983, the OCC and the Federal Reserve set minimum capital requirements for multi-national banks at the same level as for regional banks.[32]

By the early 1980s, however, it was becoming more apparent that increased competition from non-banks and broad regulatory changes in interstate expansion were injecting greater instability into the banking system. These forces directly or indirectly took their toll on weaker institutions that failed to adapt. To be sure, several other factors contributed to the surge in failures. Some financial intermediaries were allowed to take on excessive risks and were not properly supervised by regulatory authorities.

The profile of banks that failed from 1980 to 2000 was considerably riskier than that of banks that did not fail. Failed banks had a large exposure to credit risk with an average loan-to-assets ratio greater than 60% compared to only 50% for surviving banks. More important, failed banks had also a high exposure to more speculative real estate loans. In prosperous times, real estate loans can be very profitable and are extremely attractive to growth-oriented banks. Real estate assets, however, are highly treacherous in a weak economic environment.

There were several distinct real estate boom-and-bust cycles during this period. In the late 1970s, a surge in oil prices sparked a wave of overbuilding in the oil-producing states (especially, Texas, Louisiana, and Oklahoma). However, the real estate boom in Texas came crashing down after oil prices collapsed and the economy fell into a recession. Around the same time, many small agriculture banks throughout the United States suffered huge losses from delinquent farm loans. The disastrous consequences of the real estate collapse in the Southwest did not stop banks from repeating the same mistakes in the late 1980s. Banks in New England and California endured a similar boom-and-bust real estate cycle after lending heavily to businesses for new building construction and land development.

[32] In 1983, Congress also passes the International Lending Supervision Act of 1983 that directed each banking agency to ensure that all banks maintain adequate capital.

The Savings and Loans crisis

At the start of the 1980s, the S&L sector confronted essentially the same financial pressures as those faced by commercial banks. Thrifts were also greatly exposed to interest rate risk because roughly three quarters of their assets were invested in fixed-rate low-yielding mortgages and mortgage-backed products. The vast majority of thrifts were mutual organisations that had no ready access to outside capital infusions. As interest rates rose to record levels repeatedly in the late 1970s and early 1980s, S&L were confronted with sharply rising funding costs and diminishing profits. By the end of 1982, massive losses had driven the tangible capital of the industry down to 0.5% of total assets. To address the interest rate mismatch, the thrift supervisory bank board known as the Federal Home Loan Bank Board (FHLBB) and state supervisors enacted several misguided policies and deregulatory actions.[33] Thrifts also benefited from financial reforms passed by DIDMCA and the Garn-St. Germain Act. In addition to eliminating interest rate ceilings, these reforms gave S&Ls new and expanded investment powers in order to compete more effectively against commercial banks. S&L institutions took advantage of these new powers, investing in risky commercial real estate projects (see Table 3).

Overall, bank and thrift failures were concentrated in the Southern region of the country, especially in states that had adopted very liberal S&L laws and with weak bank supervision (see Table 4). The disparity in the regional concentration is actually more striking at the state level, with Texas alone accounting for close to 28% of the number of failures and over 40% of the resolution costs.

[33] In 1980, the FHLBB lowered net worth requirements, enabling S&Ls to operate with very low capital requirements that resulted in some thrifts operating with no tangible capital. The relaxation of the net worth requirements encouraged the rapid growth of deposits. The FHLBB also applied very lenient accounting rules for capital and adopted goodwill amortization rules that encouraged healthier thrifts to takeover insolvent institutions. To attract new capital to the industry, the FHLBB and state regulators liberalised ownership rules. Unfortunately, these new lax ownership rules also attracted high-risk entrepreneurs (for example, real estate developers) with no real experience in banking.

Table 3

Percentage composition of thrift assets (1980-2000)

Year	Number of thrifts	Return on assets	Mortgage loans	Real estate loans
1980	4,319	0.14	78.1	13.6
1981	4,088	-0.74	76.9	13.9
1982	3,608	-0.63	72.7	17.7
1983	3,440	0.26	69.6	20.9
1984	3,418	0.12	64.9	21.9
1985	3,626	0.38	62.0	24.4
1986	3,677	0.05	58.1	27.2
1987	3,622	-0.60	59.9	26.1
1988	3,438	-1.00	59.5	25.4
1989	3,087	-0.54	61.2	23.6
1990	2,815	-0.35	63.7	21.0
1991	2,561	0.13	66.2	18.4
1992	2,390	0.61	66.8	15.1
1993	2,262	0.63	68.1	13.4
1994	2,152	0.56	70.1	12.7
1995	2,030	0.70	70.0	12.8
1996	1,924	0.62	70.7	13.5
1997	1,779	0.84	69.8	12.8
1998	1,687	0.97	65.9	13.5
1999	1,640	0.98	63.3	14.7
2000	1,590	0.90	63.0	16.3

Table 4A

Geographic distribution of bank and thrift failures by state, 1980-2000

Top 10 States (numbers in brackets represent market shares)

State	Assets $ billions	Cost $ billions	Number of Failures
1. Texas	196.9 (21.2%)	75.8 (40.2%)	850 (28.6%)
2. California	143.6 (15.5%)	21.3 (11.3%)	214 (7.2%)
3. New York	79.6 (8.6%)	9.1 (4.8%)	69 (2.3%)
4. Illinois	72.1 (7.8%)	5.6 (3.0%)	132 (4.4%)
5. Florida	68.5 (7.4%)	9.7 (5.1%)	118 (4.0%)
6. New Jersey	35.9 (3.9%)	4.4 (2.3%)	61 (2.1%)
7. Massachusetts	33.8 (3.6%)	4.7 (2.5%)	52 (1.8%)
8. Pennsylvania	32.0 (3.4%)	3.1 (1.7%)	30 (1.0%)
9. Arizona	19.6 (2.1%)	5.6 (3.0%)	27 (0.9%)
10. Connecticut	19.2 (2.1%)	2.6 (1.4%)	43 (1.4%)

Table 4B

Geographic distribution of bank and thrift failures (by region), 1980-2000

Region	Assets $ billions	Cost $ billions	Number of Failures
Northeast	216	256	297
South	361	110	1,588
Midwest	146	16	594
West	204	38	489
Total	928	189	2,968

The massive number of failures exhausted the reserves of the Federal Savings and Loan Insurance Corporation (FSLIC), the insurance agency for thrift institutions. Faced with an insolvent insurance fund, the Congress passed the 1989 Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA). The immensity of the problem required Congress to take several drastic actions. First, FIRREA dissolved the FSLIC moving the responsibility of the thrift insurance fund to the FDIC. Second, the Congress created the Resolution Trust Corporation (RTC), which was authorised to resolve troubled thrifts using taxpayer funds. Finally, FIRREA replaced the ineffective FHLBB with a new regulatory structure and put in its place the Office of Thrift Supervision (OTS) with the mandate to strictly enforce capital standards that were at least as stringent as those recently instituted for commercial banks.

Methods of resolution

The FDIC and RTC employed several methods to resolve failed banks and thrift institutions. The most common approach was the *purchase and assumption* method (P&A) in which the insurer auctioned some of the failed institution's assets as well as the obligation to assume some of the failed institution's liabilities.[34] Usually, the auctioned package consisted of liquid and non-classified assets (cash, securities, and performing loans). Another commonly was the *deposit payoff* resolution process. In this method, the insurer paid off all insured depositors in full and established a receivership to manage the failed institution's assets. A similar approach was a *deposit transfer* in which the insuring agency would pay a bank to assume the deposits but would retain all the failed bank's liabilities. Finally, in an *open bank assistance* transaction the FDIC would provide a failing insured bank financial assistance in the form of loans, capital contributions, deposits, asset purchases, or assumption of liabilities.

The majority of the failed bank resolutions worked out by the FDIC from 1980 to 2000 were accomplished using the P&A method (See Table 5). Of the 1,649 failed bank closures, 1,216 were completed using the P&A method, 122 were deposit payoffs, 137 required open bank assistance, and the remaining 174 were done by deposit transfers. The resolution process

[34] Under the FSLIC, purchase and assumption transactions almost always included a set of guarantees that encouraged the acquiring institution to take on the failed thrift's non-performing loans and foreclosed real-estate assets. These guarantees included protections against capital loss and interest rate risk. The FDIC use of these types of guarantees was generally restricted to the largest failures.

was very similar at the RTC where over 66% of the resolutions were P&A transactions[35]. In many RTC closures, the franchise value of S&Ls was severely diminished making it almost impossible to auction the thrift. The RTC was therefore forced to rely on deposit payoffs or deposit transfers. Of the 747 institutions resolved by the RTC, 250 or about 33% were handled through deposit payoffs or insured deposit transfers.

Table 5

Methods of resolution for banks and S&Ls (1980-2000)

Variables	Fund type	Open bank assurance	Insured deposit transfers	Purchase & assumption	Deposit payoff	Other
Assets ($ billions)	FDIC	92.1 (28.7%)	11.0 (3.4%)	211.8 (66.1%)	5.5 (1.7%)	0.0 (0.0%)
	RTC-after 1989	0.0 (0.0%)	45.7 (11.6%)	337.1 (85.6%)	11.2 (2.9%)	0.0 (0.0%)
	FSLIC-before 1989	179.5 (84.1%)	2.0 (0.9%)	0.1 (0.0%)	8.4 (3.9%)	23.4 (11.0%)
Cost ($ billions)	FDIC	5.4 (14.4%)	3.1 (8.2%)	27.7 (73.6%)	1.5 (3.9%)	0.0 (0.0%)
	RTC-after 1989	0.0 (0.0%)	15.6 (19.0%)	60.2 (73.4%)	6.3 (7.7%)	0.0 (0.0%)
	FSLIC-before 1989	55.0 (79.7%)	1.0 (1.5%)	0.03 (0.0%)	3.8 (5.5%)	9.2 (13.3%)
Number of failures	FDIC	137 (8.3%)	174 (10.6%)	1,216 (73.7%)	122 (7.4%)	0 (0.0%)
	RTC-after 1989	0 (0.0%)	158 (21.2%)	497 (66.5%)	92 (12.3%)	0 (0.0%)
	FSLIC-before 1989	455 (79.5%)	11 (1.9%)	1 (0.2%)	62 (10.8%)	43 (7.5%)

Case studies of bank failures

While the majority of U.S. bank failures during 1980-2000 were small institutions, federal regulators had to respond also to a handful of large-scale crises. The resolution of a large troubled institution presented bank regulators and the FDIC with a particular quandary. A large bank failure may cause major financial disruptions, erode public confidence in the banking system as a whole and create bank runs. Consequently, bank regulators may be reluctant to let a big bank fail and cause losses to a large number of uninsured depositors. In a way, many have argued that large banks are immune to failure or are “too big to fail”.

[35] In contrast to the FSLIC, the RTC provided to asset guarantees in their P&A transactions. As a result, almost 100% of non-performing loans and foreclosed real estate were left to the RTC to manage and dispose.

Continental Illinois National Bank: the pitfalls of illiquidity

In 1984, with over $40 billion in assets, Continental Illinois National Bank (Continental) was the seventh largest commercial bank in the United States and by far the most important bank operating in the Midwest. During the 1970s and early 1980s, Continental was one of the fastest growing and most profitable large banks. From 1975 to 1981, Continental's commercial and industrial loans (C&I) grew at an annual rate of 22%, vastly outpacing the C&I loan growth of other money centre or super-regional banks. By 1981, Continental became the biggest C&I lender in the country with more than a $14 billion of business loans.

Continental achieved this rapid growth primarily through jumbo certificates of deposits, Eurodollar deposits, and through short-maturity non-deposit liabilities. Continental's strategy to greatly rely on such less stable sources of funds for its rapid growth was dictated by the restrictive unit bank law of Illinois. As noted above, under the McFadden Act national banks could not branch outside of their home states and within states had to conform to the state branching laws. Illinois' law also prohibited the creation of multi-bank holding companies within the state, thereby restricting all banks within the state to a single retail office. In name, Continental was a national bank; in fact, it was located in downtown Chicago and could collect retail deposits only at that location. Thus, Continental was confined by a very narrow consumer deposit base and had to fund its ambitious growth plan from less reliable large institutional or overseas depositors.

Uninsured large institutional depositors will continue to provide funds to a bank as long as they have confidence in the safety and soundness of the institution. In Continental's case, this confidence was broken in 1982 when market participants began to question the financial health of the bank. The first blow Continental to came when it was identified as the purchaser of $1 billion energy participation loans from the failed Penn Square Bank of Oklahoma. News of Continental's relationship with Penn Square caused a spiral of bad events. Stock analysts and rating agencies swiftly downgraded the bank. At the same time, the financial press started to question the quality of the loan portfolio, which had a significant exposure to less developed country (LDC) debt. In the first quarter of 1984, Continental confirmed these fears by announcing a $400 million rise in non-performing loans to a record $2.3 billion, most of it coming from Latin American loans.

Early in May 1984, Continental faced a run by institutional depositors, initiated by overseas depositors. In less than two months, the bank lost $10 billion in deposits and had to borrow massively from the Federal Reserve's discount window to cope with these liquidity problems. Despite an initial pledge of assistance, additional deposit withdrawals forced the FDIC to announce a rescue plan that essentially nationalised the bank[36]. As part of the resolution, the FDIC not only protected insured depositors, the agency also guaranteed uninsured accounts greater than $100,000 and even protected from losses Continental's bondholders. It is clear that the underlying problem at Continental was liquidity risk as the bank was unable to liquidate its assets to satisfy its fast-fleeting creditors. In fact, at the time of closure, Continental's net worth was over $2 billion. What the bank did not have was time to respond.

In 1984, there were 79 bank failures in addition to Continental. In 1985, bank failures increased by 50% to 120. Recognising the need for uniform capital standards, bank regulators in 1985 implemented new capital rules that set minimum capital ratios at 5.5%

[36] After the resolution, FDIC held 80% of the shares in the bank. However, the FDIC shares were nonvoting until sold, thereby indicating the agencies desire to return the bank to private sector. In 1991, the FDIC's stock was sold to the public for a net gain of $200 million.

primary capital and 6% total capital. In 1986, regulators issued preliminary risk-based capital rules and the U.S. began working with their international counterparts on a common rule. In 1988, the Basel Committee reached agreement on risk-based capital rules for internationally active banks. The U.S. regulators extended the rules to all domestic financial institutions effective December 31, 1992.

Bank of New England: the perils of real estate lending

In the early 1980s, the Boston based Bank of New England (BNE) had approximately $7 billion in assets. The bank became a large regional by the mid-1980s after it went on an acquisition spree, completing friendly mergers with Connecticut Bank and Trust, Maine National Bank, and acquiring a dozen or so smaller institutions in the area. By 1989, BNE was one of the largest banks in the Northeast with over $32 billion in assets and about 480 branches.

BNE was also the most aggressive real estate lender in the Northeast, with over 30% of its loan portfolio in commercial real estate. With the collapse of real estate values in the late 1980s, BNE began to experience high delinquencies. At the end of 1989, BNE had around $550 million of non-performing loans, approximately 2.2% of total loans. However, as it often happens with a huge real estate exposure, BNE's loan quality deteriorated very rapidly. By year-end 1990, non-performing loans reached $3.2 billion, or 20% of total loans. On Friday, January 4, 1991, BNE announced a projected $450 million fourth-quarter loss that technically rendered the bank insolvent. With failure imminent, the bank experienced a huge wave of withdrawals, losing over the weekend more than $1 billion in funds, much of it from automated teller machines.

On Sunday, January 6, the FDIC assumed the failing bank by creating three *bridge banks*, one for each of the three insolvent large subsidiaries of BNE. As part of the resolution, the FDIC agreed to pay off all depositors even those with accounts over the $100,000 insurance limit. In April, Fleet/Norstar Financial Group and the investment group Kohlberg, Kravis & Co. acquired the three bridge banks for $966 million. The net outcome, however, was that the bailout cost the FDIC roughly $2.3 billion. FDIC's decision to invoke its "too big to fail" policy, guaranteeing in full all uninsured depositors of BNE, was criticised by members of Congress for not only being unfair to uninsured depositors of small failing banks but also for undermining depositor discipline. It was also noted that BNE had declared itself insolvent, forcing the regulators to take over the bank.

The BNE failure, and the fear that more bank failures were on the horizon, caused Congress to pass the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA). FDICIA eventually addressed many of the shortcomings of the deposit insurance and regulatory system. The FDIC must now promptly close a failing bank using the least-costly method, making it less likely that uninsured depositors will be subsidised by taxpayers.

Bank failures after Basel I: the collapse of sub-prime lenders

The dramatic declines in interest rates that had started in 1991 and regulatory changes brought about by FIRREA and FDICIA had reduced bank and thrift failures to the lowest levels in decades by the end of 1995 (only six banks and two thrifts failed in 1995). Beginning in the mid-1990s, however, the increasing involvement of insured institutions in subprime consumer lending led to problems at some institutions. Subprime lending programs are

targeted to borrowers with weak credit histories or limited ability to repay their debts. Under the risk-based capital rules, the most capital that a bank was required to hold was 8% of the principal of the loan. This was meant to equate to the risk of a standard C&I loan. Sub-prime lending had a much higher risk profile than a C&I loan, but had the same risk-based capital charge. By engaging in sub-prime lending, an institution could be in full compliance with all capital rules but in reality be operating with greatly increased leverage.

The first sub-prime institution to fail was BestBank in 1998. BestBank specialised in issuing credit cards to sub-prime borrowers who agreed to join a travel club. The servicer hid massive delinquencies in the portfolio. When the fraud was discovered the bank was closed and the insured deposits were passed to a local institution. The institution had $233 million in assets at closing. FDIC resolution costs have amounted to $222 million, 95% of assets.

In 1999 two sub-prime banks failed, The National Bank of Keystone (Keystone) and Pacific Thrift and Loan (PTL). Keystone was supposedly a $1.1 billion-bank that specialised in sub-prime lending. Keystone securitised some of these loans and had large concentrations of "retained interests" (RIs).[37] The RIs were the primary concern of the supervisory authority and the proper valuation of the RIs was the principal source of disagreement between the regulators and the institution. When regulators began an examination of the institution in 1999, fraud was detected. Keystone had booked hundreds of millions of loans that did not exist or were not owned by Keystone. The FDIC resolution costs were close to $780 million 71% of reported assets.

Pacific Thrift and Loan failed within three months of Keystone. PTL was a relatively small bank with about $127 million in assets. It originated sub-prime loans, securitised and sold the loans and retained the residual interest. The underlying loans had higher delinquency rates and higher pre-payments than the institution had anticipated resulting in large write-downs of the RIs and the subsequent failure of the institution. No fraud was alleged; nevertheless, losses were extremely high at $42 million, 33% of assets. After Keystone and PTL, U.S. bank supervisors began discussing changes in the capital rules to prevent future sub-prime failures, but there were no substantial changes until Superior Bank, FSB failed in July 2001.

Many institutions that engaged in sub-prime lending sold the principal balances through securitisation. A typical transaction would result in three pieces; a AAA rated security, an over-collateralisation account (OC) to provide credit enhancement for the security, and a residual. For example, assume an institution has originated $100 million in sub-prime first mortgages at 14%. The institution might create a AAA-rated security, with a 7% interest rate and sell between 94% and 95% of the principal balance into the securitisation. The credit enhancement is a restricted account that has the remaining loans that were not sold and receives all of the 7% (14% minus 7%) "excess interest." The excess interest is credited to the OC until the required over-collateralisation is achieved; at that point, excess interest can begin to flow to the residual. When the securitisation is created and the loans are sold and converted into the security the institution is left with the OC and the residual. Under FASB

[37] RIs were the primary concern of the federal regulators for each institution and the proper valuation of the RIs was the principal source of disagreement between the financial institutions and the regulators (this was true at Keystone until the fraud was discovered). In the case of PTL and Superior, when the accounting issues were ultimately settled, the assets were found to have dramatically lower valuations and both institutions failed. These transactions have similar characteristics to some of the more egregious commercial real estate practices of the 1980's. In those transactions, large fees were booked up front, but were "paid" out of the proceeds of the loans. The actual profitability of the loan would not be known until the loan was due. Superior's accountants opined that the thrift's valuation of the residuals was "reasonable and supportable" and in compliance with GAAP and regulatory guidance on FASB 125 and 140. This view, of course, was contrary to that of the regulatory authorities.

125, the institution is supposed to estimate the cash flows that will go into the two pieces. These estimates depend upon assumptions respecting prepayments and credit losses in the underlying portfolio, and are present valued using an "appropriate market discount rate." If the institution had sold 95% of the book value to the trust for the AAA security, the estimated value of the OC and the residual combined had to be over 5% of the original book value for the institution to have a "gain-on-sale" and book a profit.

For these transactions, until the securitisations have performed for a number of years the profits are all estimates. History shows that such estimates are highly volatile and frequently inflated. From 1995 through 1999, Superior reported total profits of about $457 million and total gains on securities sales of about $550 million. During the same period, Superior distributed approximately $180 million in dividends to its holding company. A year prior to failure, Superior reported total equity capital of $280 million, total risk based capital of $279 million for a risk based capital ratio of 8.61%. The gain on sale from the securitisation had fully capitalised the bank.

In the course of the 2000 examination, the FDIC and the OTS discovered that Superior was not discounting the OC portion of its securitisations in accordance with FASB 125, but rather was valuing the asset at par. Superior's position, supported by the local office of their accountant, Ernst and Young (E&Y), was that the OC was invested and earning at the same interest rate as the AAA-rated bonds in the securitisation, resulting in a par valuation. The FDIC/OTS position was that the asset was a restricted asset (no distributions were allowed until the principal balances in the underlying pool were significantly reduced) with significant risk. Therefore, the cash flows should be discounted at a much higher risk-adjusted discount rate. E&Y's national office eventually concurred with the regulators' position and the OC assets were written down by $270 million. This was almost half of the institution's total gain-on-sale for the 5-year period, 59% of the profits and 150% of reported dividends and almost all of the remaining capital in the bank. Other adjustments to the bank's calculation of the value of the RIs resulted in the bank's failure in August of 2001. When it failed, Superior had $1.76 billion in assets. Losses on the assets are estimated to be about $500 million (28.4%). However, the loss has been significantly reduced by a substantial payment from one of the principal owners of the firm the Pritzker family (owners of the Hyatt hotel chain). Taking into account the payment the loss has been reduced to $375 million.

Subsequent to the failure, the federal regulators agreed to change the capital treatment of residual interests and credit enhancement reserves. The gains in the RIs are no longer counted for risk-based capital purposes and a bank can hold no more than 25% of total equity capital in interest only strips (or the last tranche of securitisation). Under this rule, banks would have to hold capital against the entire amount of the securitisation at risk, without the benefit of using the calculated gain. In addition, the institution would not be able to be overly concentrated in first loss position assets.

Conclusions

The thrift and banking crises of the 1980s and 1990s were effectively addressed by increased supervisory scrutiny, risk-based capital requirements, new closure rules, and perhaps most importantly, lower interest rates and a very long economic expansion. The U.S. financial system has proved very resilient during the recession and subsequent slow recovery.

Summary of Bank Failures in Mature Economies

Failures can be classified in many ways, including by risk type, the type of shock that precipitated the failures or crisis, the state of the banking system, what portion of the banking system was affected, how the crisis was resolved, and whether the failures resulted in regulatory changes. While each country's experience has unique characteristics, looking across all of the banking crises can help reveal patterns of bank failures. For example, Spain, Norway, Sweden and the U.S. had very similar experiences when they liberalised their financial systems. In addition, in countries where there were a significant number of failures, real estate lending played a major role. The failure of large individual banks tended to be much more idiosyncratic. The Barings and BCCI failures both had significant fraud, but the Herstatt bank failure was more market related. One way to look at the failures in a systematic fashion is to develop a classification scheme (see Table 6).

From Table 6, some patterns stand out. Credit risk, particularly real estate lending, led to widespread banking problems in Switzerland, Spain, the United Kingdom, Norway, Sweden, Japan and the U.S. Market risk was the principal cause of failure in the isolated failure of Herstatt (Germany). Market risk also caused the first stage of the U.S. Savings and Loan failures. Financial liberalisation (deregulation) was a common feature of major banking crises often combined with supervisory systems that were inadequately prepared for the change. Credit concentration risk, usually in real estate, was cited in nine out of the 13 episodes. The breadth of the crises varied considerably. In Switzerland, the United Kingdom, and the recent U.S. case, only small banks were affected. In Spain, Norway, Sweden, Japan, and the U.S. in the 1980's, the whole banking system was affected. The speed of resolution and the rate of closures also varied greatly. Most of the widespread failures required some amount of public support, sometimes in very large amounts. All of the episodes that involved large amounts of public support were caused by credit risk problems. Most countries instituted regulatory changes following the failures, with the exception of the United Kingdom following the small bank crisis.

The widespread banking crises that involved credit risk were remarkably similar. A period of financial deregulation resulted in rapid growth in lending, particularly in real estate related lending. Rapidly rising real estate prices encouraged more lending, abetted by lax regulatory systems in many cases. When economic recessions occurred, inflated real estate prices collapsed, leading directly to the failures.

The one-off failures were exceptions to the pattern. In the U.S., Continental Illinois failed due to losses in its commercial loan portfolio, and the string of failures of sub-prime financial institutions in the U.S. was caused by fraud and losses on loans to borrowers with sub-standard credit histories. while the failure of BCCI was caused by a mixture of fraud and commercial loan losses. The one-off failures were not as closely tied to the economic downturn as the widespread failure episodes.

Failures due exclusively to market risk were remarkably few. In 1974, Germany's Herstatt Bank failed due to massive losses in the bank's foreign exchange operation. The bank was speculating in the foreign exchange market that had been converted from a fixed exchange rate regime to a floating rate regime by the collapse of the Bretton Woods System. The Herstatt failure is well known in international finance. The Herstatt bank was closed at the end of the business day in Germany, it then suspended payments to banks in other countries that were still open. This left the open banks exposed to their Deutsche mark position they had paid for earlier in their business day. This type of settlement risk is referred to as Herstatt

Table 6

Summary of G10 banking crises

Risk Type	Switzerland (91-96)	Spain (78-83)	UK			Germany	Norway	Sweden	Japan	US			
			BCCI (1991)	Small Banks (91-92)	Barings (1995)	Herstatt (1974)	(88-93)	(91-94)	(94-02)	Cont'tal Illinois (1984)	S & L (82-95)	New England (90-91)	Sub-Prime (98-00)
Credit	√	√	√	√	**X**	**X**	√	√	√	√	√	√	√
Market	**X**	**X**	**X**	**X**	√	√	**X**	√	**X**	**X**	√	**X**	**X**
Operational (inc. fraud)	**X**	√	√	**X**	√	√	**X**	**X**	**X**	**X**	**X**	**X**	√
Shock													
Macro: real economy	√	√	√	√	**X**	**X**	√	√	√	**X**	√	√	**X**
asset prices	√	√	**X**	√	**X**	**X**	√	√	√	**X**	√	√	**X**
Banking system													
Financial liberalisation	√	√	√	√	**X**	√	√	√	√	**X**	√	**X**	**X**
Poor regulation/supervision	**X**	√	**X**	**X**	**X**	**X**	√	√	√	**X**	√	**X**	**X**
Risk concentration	√	√	**X**	√	**X**	**X**	**X**	√	√	**X**	√	**X**	√
Bank specific	**X**	**X**	√	**X**	√	√	**X**	**X**	**X**	√	√	**X**	√
Impact													
Whole banking system	**X**	√	**X**	**X**	**X**	**X**	√	√	√	**X**	√	**X**	**X**
Small banks only	√	**X**	**X**	√	**X**	**X**	**X**	**X**	**X**	**X**	**X**	√	√
One bank	**X**	**X**	√	**X**	√	√	**X**	**X**	**X**	√	**X**	**X**	**X**
Systemic risk	**X**	√	**X**	√	**X**	√	√	√	√	√	√	**X**	**X**
Crisis resolution													
Speed of resolution	**quick**	**quick**	**quick**	**slow**	**quick**	**quick**	**quick**	**quick**	**slow**	**quick**	**slow**	**quick**	**quick**
Mainly closures	**X**	**X**	√	√	√	√	**X**	**X**	**X**	**X**	**X**	**X**	√
Main type of support	**private**	**public/ private**	**X**	**private/ public**	**X**	**X**	**public/ private**	**private/ public**	**public**	**public**	**public**	**public**	**public**
Fiscal cost of resolution (% of annual GDP)*	**< 1**	**5**	**Nil**	**0.007**	**Nil**	**Nil**	**3.1**	**4.0**	**(a)**	**.0003**	**2.1**	**Nil**	**Nil**
Regulatory changes	√	√	√	**X**	√	√	√	√	√	√	√	**X**	√

Notes: **X** denotes no or not a cause of failure. **Nil** denotes that the failure cost was either zero or close to zero.
Sources: Fiscal data from Swiss National Bank; Cuervo, Álvaro: "La crisis bancaria en España" Ed. Ariel, 1985; UK Small Banks: Bank of England Annual Report, 2000; Norwegian Ministry of Finance; Sveriges Riksbank; FDIC and FDIC respectively.
(a) The Japanese Financial Services Agency reported that Japanese banks held Y40.1trillion ($342 billion) in non-performing loans as of September 2002.

Risk. The Barings failure is also infamous. The bank suffered market losses in its subsidiary in Singapore. A senior trader concealed the losses until they were so massive that the banking organisation failed. The bank's internal controls and management structure were clearly inadequate.

The process of financial liberalisation (though not the financial liberalisation itself) was a major factor in Spain, Norway, Sweden, and the U.S. S&L crisis. All four countries lifted interest rate controls before the crisis, and all four had regulatory systems that were ill prepared for the crises that followed. The financial institutions in these countries were also poorly prepared to operate in the newly liberalised environment. Lax supervision made responding to the problems very difficult, but Norway, Sweden and Spain had dealt with their systemic crises within five years of its onset. In the U.S., the S&L crisis extended from 1981 to 1995 and required many attempts at legislative reform.

This is not to say that future failures will be like those in the past. Insolvencies caused by credit risk may be reduced by the extensive use of credit default swaps and derivatives. Liquidity risk could become more important if banks invest more of their funds in thinly traded or illiquid assets. Commercial banking and investment banking may become even more intertwined, possibly increasing the cyclicality of earnings.

The study also casts some light on the role of banks' capital. Banking problems were more severe and/or more difficult to resolve when they hit weakly capitalised institutions. While Norwegian banks failed in the early 1990s, better capitalised Danish banks were much more resilient to a similar period of economic stressWhere capital requirements were not risk adequate, banks sometimes did respond by taking risks that led them into difficulties, as is illustrated by some U.S. examples. The 1988 Basel Accord thus had beneficial effects. The introduction of risk-based capital standards forced supervisors and banks to begin examining the underlying risks in banks. The Accord allowed U.S. regulators to agree on uniform and increased capital standards for all types of banks and thrifts. The Accord also encouraged supervisors and bankers to more closely examine the underlying risks in banks and make portfolio changes based on those risks.

The observation made by the Groupe de Contact (1999) that the vast majority of failed banks showed intact capital positions when problems emerged, thus has to be read with great care. First, banks' accounting capital fails to measure its true capital position if accounting and valuation are inadequate, as was the case with several banks that failed, most notably with BCCI or Barings. Second, even though regulatory capital may not always have prevented banking problems, sufficient capital did at least help the restructuring of banks as ongoing concerns. Third, the merits of regulatory capital cannot only be judged on the basis of failed banks alone, the main benefit of capital requirements being that some banks did not fail that might have done so in the absence of any capital standards.

As might be expected, the responses of supervisors and governments have been varied. Some crises extended over very long periods (Japan, U.S.) and forced the countries to make difficult and expensive changes to solve the problem. Others (Switzerland, U.K.) were resolved quickly. The types of resolutions used ranged from the closure and liquidation of the failed banks (Barings, and Herstatt) to government takeovers and recapitalisation (Norway and Sweden). As a rule, governments tended to play an active role, sometimes even by injecting new capital, in cases where the causes of the crisis included a macro-economic shock, and when its reach was systemic. It seems, though, that the type of resolution, as far as it is anticipated by the markets, can have an impact on the crisis itself. The most salient example is the S+L crisis in the U.S. which was aggravated by insured depositors' confidence in their immunity from any losses.

Regulatory change during or after the bank failures was very common. Widespread or systemic events usually resulted in some type of legislative response. Sweden, Norway, the U.S. and Japan all had major legislation enacted, with the U.S. and Japan both having numerous laws passes during their crises. Spain, Germany, and the U.K. (Barings, BCCI) responded to their bank failures with regulatory changes. Legislative and regulatory changes followed three main lines. First, supervisors tried to improve the risk adequacy of regulation. One example is additional reporting requirements (of interest rate risk in the Swiss case, e.g.). Another is additional capital requirements for national risk characteristics not captured by the 1988 Basel Accord (a tougher treatment of securitisation in the U.S. or dynamic provisioning in Spain). Second, legislators and supervisors tried to strengthen market and supervisory discipline, exemplified by regulatory changes in the US (FDICIA, PCA) and in Japan. Finally, some countries revised legislation with a view to more efficient resolution (new insolvency rules in Switzerland). While considerable efforts to improve banking regulation and ongoing supervision were taken on a national level, national authorities have also pooled their experience within the revision of international capital standards under the guidance of the Basel Committee on Banking Supervision (Basel II).