



BANK FOR INTERNATIONAL SETTLEMENTS

BIS Working Papers

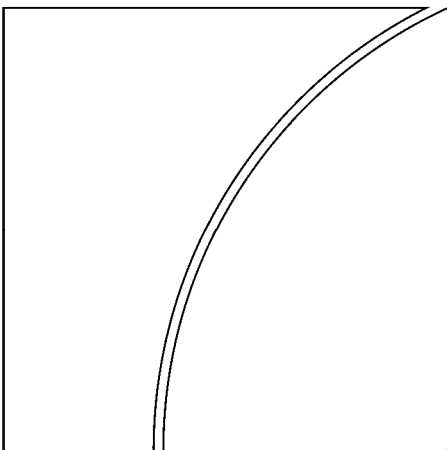
No 311

Resolving the financial crisis: are we heeding the lessons from the Nordics?

by Claudio Borio, Bent Vale and Goetz von Peter

Monetary and Economic Department

June 2010



JEL Classification: G01, G21, G28.

Keywords: Crisis management and resolution, principles for successful resolution, Nordic countries, fair value and amortised cost accounting, mark to market losses.

BIS Working Papers are written by members of the Monetary and Economic Department of the Bank for International Settlements, and from time to time by other economists, and are published by the Bank. The papers are on subjects of topical interest and are technical in character. The views expressed in them are those of their authors and not necessarily the views of the BIS.

Copies of publications are available from:

Bank for International Settlements
Communications
CH-4002 Basel, Switzerland

E-mail: publications@bis.org

Fax: +41 61 280 9100 and +41 61 280 8100

This publication is available on the BIS website (www.bis.org).

© *Bank for International Settlements 2010. All rights reserved. Brief excerpts may be reproduced or translated provided the source is stated.*

ISSN 1020-0959 (print)

ISBN 1682-7678 (online)

Resolving the financial crisis: are we heeding the lessons from the Nordics?

Claudio Borio¹, Bent Vale² and Goetz von Peter¹

Abstract

How does the management and resolution of the current crisis compare with the response of the Nordic countries in the early 1990s, widely regarded as exemplary? We argue that, while intervention has been prompter, the measures taken so far remain less comprehensive and in-depth. In particular, the cleansing of balance sheets has proceeded more slowly, and less attention has been paid to reducing excess capacity and avoiding competitive distortions. In general, policymakers have given higher priority to sustaining aggregate demand in the short term than to encouraging adjustment in the financial sector and containing moral hazard. We argue that three factors largely explain this outcome: the more international nature of the crisis; the complexity of the instruments involved; and, hardly appreciated so far, the effect of accounting practices on the dynamics of the events, reflecting in particular the prominent role of fair value accounting (and mark to market losses) in relation to amortised cost accounting for loan books. There is a risk that the policies followed so far may delay the establishment of the basis for a sustainably profitable and less risk-prone financial sector.

JEL Classification: G01, G21, G28.

Keywords: Crisis management and resolution, principles for successful resolution, Nordic countries, fair value and amortised cost accounting, mark to market losses.

¹ Bank for International Settlements

² Norges Bank

Table of contents

Introduction	1
I. Crisis management and resolution: principles.....	2
Principle 1: Early recognition and intervention	3
Principle 2: Comprehensive and in-depth intervention	4
Principle 3: Balancing systemic costs with moral hazard	5
II. The Nordic crises and today's: comparing the response.....	6
Principle 1: Early recognition and intervention	6
Principle 2: Comprehensive and in-depth intervention	10
Principle 3: Balancing systemic costs with moral hazard	17
III. The Nordic crises and today's: why did the responses differ?	18
Macroeconomic conditions	19
The international dimension of the crisis	19
The complexity of the assets involved.....	20
Fair value vs amortised cost accounting and the dynamics of the crisis	20
Overall assessment and possible implications	22
Conclusion	23
References	24
Annex 1: A brief description of the Nordic crises	28
Annex 2: Timelines and conditionality of support in the Nordic crises.....	29
Norway (1988–93)	29
Finland (1991–93)	32
Sweden (1991–94)	33
Annex 3: Support packages in the Nordic crises	36
Annex 4: The global financial crisis	39

Introduction¹

History indicates that the way financial crises are managed and resolved can deeply influence subsequent economic performance.² The response can affect the length of the slump, the speed and strength of the subsequent recovery and, in all probability, the long-term growth rate too. The response of the Nordic countries to their banking crises in the late 1980s and early 1990s has been widely regarded as exemplary, setting a helpful blueprint for future efforts. It was swift, comprehensive and in-depth, helping to re-establish the basis for sustainable growth. While the resolution of the current crisis is still unfolding, it is now over two years since the turbulence started. This seems a good time to draw a comparison with the Nordic precedent: it is still too early for a full post-mortem, but early enough to help inform current policies.³

We address the following questions. How does the management of the current crisis compare with that of the Nordic countries and the corresponding principles for successful crisis resolution? To the extent that it differs, what are the main reasons, and what might be the possible consequences?

Our analysis indicates that current policies have followed those principles in some respects, but have fallen short in other, arguably more important, ones. If anything, the authorities have intervened even earlier than in the Nordic precedent. In the current episode, the down-leg of the financial cycle had not proceeded as far and banks were further away from the point of technical insolvency. However, the underlying weakness in balance sheets has not been recognised as fully. Efforts to write down assets and induce underlying adjustment in the sector have not been as extensive. Impaired assets have been kept on balance sheets at highly uncertain, and possibly inflated, values. The conditions attached to financial support have not been as strict with respect to asset and cost *reductions*; if anything, they have been designed with an eye to *sustaining* lending. The need to reabsorb the sector's excess capacity has taken a back seat. All this has tended to slow down resolution.

A number of factors partly explain this basic difference. First, the crisis has been much more international in nature. Large cross-border operations have complicated resolution considerably. They have also heightened incentives to extend support to domestic institutions to avoid putting them at a competitive disadvantage. Second, the products at the heart of the initial stages of the current crisis have been more complex. Structured securities have proved harder to price and deal with than the plain vanilla loans involved in the Nordic

¹ This paper was prepared as the basis for the keynote lecture at the 12th Moneda y Credito Symposium "Global crisis: How did we get here? Where do we stand? Where is the exit?" in Madrid on 12-13 November 2009. It does *not* incorporate any information that became available after end-November 2009. We would like to thank Göran Lind, Juha Tarkka and Asbjørn Fidjestøl for providing information on the resolution of the Nordic crises; Jerry Edwards, Hans Genberg, Jacob Gyntelberg, Michael King, Robert McCauley, Nicolas Véron and John Vickers for helpful comments; Homero Gonçalves and Jimmy Shek for assistance with the graphs; and seminar participants at the Bank for International Settlements, the Federal Reserve Bank of San Francisco and Norges Bank for useful feedback. We are particularly grateful to Corrinne Ho, Giulia Felber and Reto Hausmann for their efforts in the collection of bank rescue data at the BIS. The views expressed are those of the authors and do not necessarily represent those of the Bank for International Settlements or Norges Bank.

² The edited volumes of Honohan and Laeven (2005) and Hoelscher (2006) provide comprehensive reviews of resolutions of systemic banking crises. For reviews of evidence and the design of resolutions, see Hoggarth et al (2003), Calomiris et al (2005), and Claessens et al (2005) and Dziobek and Pazarbasioglu (1997), and Hoelscher and Ingves (2006).

³ The paper relies on detailed information on resolution measures taken from primary sources. The information on the Nordic crisis was drawn from official records and the input of senior officials involved; that on the current financial crisis was collected at the BIS under the aegis of the Committee of the Global Financial System, and validated by central banks and other national authorities.

crises. Finally, mustering public support for the necessary in-depth measures through the political process has been more difficult.

That said, the factor we would like to stress, as it has received less attention, relates to accounting conventions and, specifically, the coexistence of large credit portfolios that are valued on a fair value basis (marked to market where possible) with traditional loan books valued on a amortised cost basis. The current crisis was triggered by losses on mark to market portfolios; those in the Nordic crises by losses on traditional loan books. Mark to market accounting recognises losses much earlier than amortised cost accounting does. Paradoxically, this prompter recognition, and the earlier intervention it triggered, has actually complicated resolution in some crucial respects. For one, it has made it harder for authorities to exert the degree of control necessary to clean up balance sheets. For the most part, mark to market losses have wounded institutions but have not been large enough to make them technically insolvent, given the size of the loan books. This has inhibited the application of strict conditions or the enforcement of writedowns, given the higher risk of infringing the property rights of shareholders when the residual value of equity remains positive. In addition, the funding disruptions caused by mark to market losses may have clouded the interpretation of the underlying problems. For some time, what was fundamentally an incipient solvency crisis was treated more as a pure liquidity crisis. It was widely believed that the sharp asset price declines would be temporary and that central bank liquidity support would restore market functioning and effective intermediation. The looming losses on loan books did not receive equal attention. Partly as a result, the authorities stressed the need to sustain credit supply and aggregate demand rather than that of enforcing adjustment.

If this analysis is correct, there is a risk that existing policies may delay the restoration of conditions for a self-sustaining recovery in which the financial system can operate profitably and efficiently without public support. And contrary to received wisdom, it may be possible for the authorities to intervene too early. They may be caught in no man's land. The analysis puts a premium on the intensification of current efforts to repair balance sheets and remove excess capacity. It also suggests that, in future crises, policymakers should be alert to the possibility of intervening too early, and adapt their crisis management and resolution practices accordingly.

The paper is organised as follows. Section I recalls and justifies three broadly accepted principles for the successful management and resolution of financial crises. Section II compares the policy responses to the Nordic and the current crises, using the Nordic example as a benchmark. Section III explores possible reasons for the differences and notes possible consequences. Importantly, our focus is on the big picture, rather than on a country by country discussion. We seek to highlight broad similarities rather than cross-country differences. As a result, we cannot do justice to all country-specific circumstances.

I. Crisis management and resolution: principles

The main aim of crisis management and resolution is to keep to a minimum the short and long-term costs (ie net present value) of lost output. A broad consensus exists on three principles of crisis management that are conducive to this goal. This consensus is based on lessons drawn from the handling of financial crises in both industrial and emerging markets over many years.⁴ To be sure, areas of disagreement still exist. Some of these

⁴ The crises probably contributing most to this consensus are the Great Depression (1929-1933), the savings and loans debacle (1980s), Japan's lost decade (1990s), the Asian crisis (1997-1999) and the Nordic crises (1990-1993). See also the references cited in footnote 2.

disagreements arise from the differing circumstances and institutional settings that may determine the choice of particular instruments, trade-offs and timing considerations. Others reflect more fundamental trade-offs. With that proviso, the three principles are a useful starting point for our analysis.

The principles relate to (i) the speed of recognition and intervention; (ii) the breadth and depth of the response; and (iii) how to balance systemic costs with the need to contain moral hazard. We discuss each in turn.

Principle 1: Early recognition and intervention

P1: The nature and size of the problems should be recognised early and intervention should follow quickly.

The purpose of early recognition and intervention is to avoid a hidden deterioration in conditions that could magnify the costs of the eventual resolution. This lesson was highlighted, in particular, by the US savings and loan crisis and by Japan's experience during the 1990s (eg Brewer (1995), Peek and Rosengren (2005), Nakaso (2001)).

A key reason why costs tend to increase as action is delayed is that economic agents operate under distorted incentives. If problems are not recognised by outside investors, the cost of funding will fail to adjust upwards. As a result, the financial sector will continue to absorb an excessive volume of resources and misallocate them. Even if incumbent management and controlling shareholders do recognise the problem, they still have an incentive to delay adjustment. Avoiding outside interference helps preserve the option value of their stakes. They thus have an incentive to "double their bets" and take on risk that is excessive from a social perspective: "heads" they win; "tails" outsiders lose. Similarly, there may be a tendency to privilege distressed borrowers over the rest – by "evergreening" loans, extending new ones to cover up the borrowers' inability to pay. As the misallocation of resources grows over time, so does the cost to taxpayers, who must eventually finance the rescue operations. In effect, this is a hidden contingent government liability. Importantly, the costs in terms of output loss will grow too.

The incentives of management and controlling shareholders are just one of several factors that can contribute to delays in recognising and responding to asset deterioration. Another factor is accounting and auditing practices. Enforcement may be deficient. Further, as is well known, amortised cost accounting for loans does not look forward; rather, the present "incurred loss" model requires clear evidence of a default before a loss can be booked.⁵ Yet another factor relates to political economy considerations. Policymakers may have an incentive to postpone recognition to avoid embarrassment or the political costs of financing the adjustment. No less than management, albeit for different reasons, policymakers have motives for delay.

Experience shows that the bias towards inaction can be powerful. Indeed, it can weigh overwhelmingly on both economic agents and institutions. Principle 1 is intended to address precisely these forces of inertia.

Early intervention requires supportive institutions. The necessary instruments need to be in place, or, if they are not, the political and regulatory system should be able to establish them promptly. For example, early intervention is facilitated by a *special resolution regime* for banks (and, ideally, for other systemically important financial institutions) that gives regulators and supervisors the authority to intervene *before* a bankruptcy occurs, triggering a

⁵ The IASB (November 2009) and FASB (May 2010) have recently proposed more forward-looking impairment approaches for loans and investments in debt securities that go beyond the incurred loss model.

costly and lengthy liquidation process. One example of a regime that provides for just such prompt corrective action is the Federal Deposit Insurance Corporation Improvement Act (FDICIA) in the United States. Absent such a regime, early intervention will require swift *policy decisions*, typically backed by legislative action. This would avoid the temptation to resort to regulatory forbearance as a temporary expedient until the necessary policies and supporting legislation can be passed. Forbearance can produce serious long-term collateral damage in terms of incentives and the credibility of the framework.

Principle 2: Comprehensive and in-depth intervention

P2: Intervention and resolution should be broad-ranging and in-depth.

The overriding objective is to restore lasting confidence in the financial system and its capacity to operate effectively and sustainably, without public support. Piecemeal policies fail to address the underlying problems and necessitate subsequent policy corrections or reversals. Intervention includes three critical steps: (i) stabilising the financial system; (ii) restructuring balance sheets; and (iii) re-establishing the conditions for the sector's long-term profitability. Together, these steps should lay the basis for a sustainable recovery. We consider each in turn.

(i) Stabilising the financial system, by maintaining liquidity and ensuring banks' continued access to funding, is necessary to avoid the system's collapse. Typically, stabilisation relies to varying degrees on several forms of intervention (Hoelscher and Ingves (2006)). Emergency central bank liquidity assistance helps banks or specific markets overcome temporary funding disruptions and it supports the functioning of payment and settlement systems. An explicit and credible deposit insurance system helps avert bank runs by retail depositors and can relieve bail-out pressures, by providing prompt repayment in the event of a failure. It is not, however, by itself sufficient to prevent wholesale runs, which are much more harmful (Borio (2009)). Ensuring continued access to funding may thus require issuing guarantees on wholesale bank liabilities. Whether blanket guarantees are deemed necessary depends on the gravity of the situation and on whether alternative mechanisms for intervention are in place.⁶ If they are, they should be accompanied by intervention aimed at limiting the distortions they produce. This can be achieved by either appropriate pricing or restrictions on recipient banks to prevent them from using subsidised funding to gain market share (see P3 below).

(ii) Restructuring balance sheets is essential to restore confidence in the financial system and to provide the right incentives for management and claimants on financial intermediaries. First, losses have to be addressed comprehensively, through writedowns of bank assets. Second, the system needs to be recapitalised to guarantee its continued functioning in the face of existing *and* prospective losses. Third, bad assets need to be effectively managed so as to extract value from them. This can be done either within individual institutions in a decentralised way or through separate asset management companies, depending on circumstances and operational efficiencies (see below). Separate management requires a reliable and litigation-proof pricing mechanism for the transfer of assets, which may be hard to put in place (see Sections II and III). Ideally, the institutions would be sorted according to their current plight and future prospects, with a view to calibrating the type of assistance required (extent of recapitalisation and restructuring, whether through mergers, acquisitions, or liquidation). Throughout this process, a high degree of transparency can help reduce uncertainty and restore confidence, provided that mechanisms to avoid destabilising reactions are in place.

⁶ The use of guarantees is subject to some disagreement; some argue that guarantees constrain, rather than help, the authorities in the resolution of a banking crisis (eg Kane and Klingebiel (2004)).

(iii) Re-establishing the conditions for the sector's sustained profitable operation involves several measures. First, excess capacity should be reduced, through shrinkage of operations and balance sheets. Excess capacity is very likely to exist, as systemic crises are typically preceded by an overexpansion of the financial sector, on the back of rapid credit expansion, high leverage and bloated asset prices (eg, Minsky (1982), Kindleberger (1996), Borio and Lowe (2002)). Second, operational efficiency should be promoted, by seeking to refocus businesses on core activities and cutting costs. Finally, competitive distortions should be avoided as far as possible, especially between the institutions receiving support and the rest.

Two further points concerning Principle 2 merit particular attention. First, in the face of a systemic crisis, intervention will necessarily involve public money. Public money is needed to recapitalise the institutions and, if deemed necessary, to provide backup guarantees and to purchase assets. Thus, the political will to commit the necessary resources is essential, as is the effective use of the available resources. As a result, an important consideration is to keep the cost to taxpayers to a minimum.

Second, restructuring balance sheets and re-establishing the conditions for sustained profitability may require a forceful approach at several junctures. The authorities may need to exercise a degree of control that is sufficient to overcome resistance from incumbent management and shareholders. For the reasons outlined above, conflicts of interest are rife. A measure of public control, whether through strict conditionality, public control or ownership, allows contentious decisions to be implemented, such as those regarding writedowns, transfer prices or operational restrictions. It also reduces the risk that decisions might be subsequently reversed in court.

Principle 3: Balancing systemic costs with moral hazard

P3: Intervention should strike a balance between limiting the adverse impact on the real economy and containing moral hazard.

Each side of this balance represents a legitimate policy objective. The need to strike a balance reflects an underlying tension. On the one hand, intervention is precisely designed to limit the unfettered operation of market forces. The concern is that markets exercise discipline too abruptly and indiscriminately, raising the risk that the financial system implodes and cripples the real economy. On the other hand, that very intervention, by insulating agents from market discipline, may distort incentives (see P1). During the resolution phase, agents may be tempted to abuse the privilege of access to public money. In the long term, they may behave less prudently, sowing the seeds of yet another crisis.

There are effectively two mechanisms to manage this trade-off. The first is through the treatment of the firm's stakeholders during the restructuring process. To limit moral hazard, there is a consensus that those who got the banks into trouble should be made to pay to the maximum possible extent. Managers and existing shareholders would be the first to pay, via dismissals and asset writedowns for example. Subordinated debt holders would be next in line, although whether debt can be written down without triggering contagion is an open question and depends on specific arrangements. Avoiding some degree of insulation of debt holders, especially when debt is held by other banks, has proved very difficult in practice. The second, complementary, mechanism is through conditionality. Strict conditions and restrictions imposed in exchange for support help to contain moral hazard. They prevent supported banks from exploiting an unfair competitive advantage, leaving other banks to engage in lending activities in an untrammelled fashion. The temporary transfer of control (and ownership in the case of nationalisation) to the government can play a similar role.

Beyond this consensus, the question of where exactly to strike the balance in specific circumstances continues to be debated.

II. The Nordic crises and today's: comparing the response

The way the Nordic countries dealt with their banking crises in the late 1980s–early 1990s is widely regarded as exemplary (see the brief description in Annex 1 and BIS (1993)). This section reviews how the management of the current crisis compares with that of the Nordic crises in the light of the crisis resolution principles set out in Section I. While definite conclusions have to await further developments, a preliminary evaluation based on the Nordic precedent may prove useful. As noted, by design, we focus on the big picture only and cannot do full justice to country-specific circumstances.⁷

Principle 1: Early recognition and intervention

There is a consensus that, in the Nordic countries, problems were recognised early and the authorities were quick to react. The authorities did not exercise forbearance: if anything, accounting practices were tightened. And as distress unfolded, interventions followed quickly. Within a month or two of the outbreak of systemic problems, the authorities announced or implemented a wide range of measures. In this way the governments recognised that their financial systems faced deep problems. As none of the Nordic countries had the institutions or the legal framework to handle failures of systemically important banks, the initial interventions were somewhat ad hoc (see timelines, Annex 2). But frameworks were adjusted promptly in response to events.⁸

At the same time, more specific benchmarks are required if the timing of interventions is to be assessed and cross-country comparisons made. Here we use two such benchmarks. The first seeks to identify the timing of the intervention *relative to the financial cycle*. In line with the writings of Minsky (1982) and Kindleberger (1996), experience indicates that financial crises tend to emerge during the down leg of major financial cycles, which are characterised by booms and busts in credit and asset prices that amplify fluctuations in GDP (eg Borio and Lowe (2002), Borio and Drehmann (2009), Reinhart and Rogoff (2009)). As losses necessarily accumulate as the down leg of the cycle proceeds, an early intervention allows asset quality less time to deteriorate. The timing of the intervention, in turn, depends on the timing of the first systemic event and on the speed of the response. The second benchmark assesses the timing of the intervention *relative to the book insolvency of the institutions*. We focus on four forms of intervention: the first major government rescue and recapitalisation; the first general recapitalisation programme, either targeted at troubled banks or open to all banks, regardless of their level of capitalisation;⁹ the introduction of a debt guarantee scheme; and the first asset purchase or asset insurance programme.

The evidence confirms that the current crisis and the Nordic crises reflected the reversal of an outside financial cycle. The crises were preceded by a rapid and prolonged rise in the ratio of private sector credit to GDP alongside equally sharp increases in asset prices,

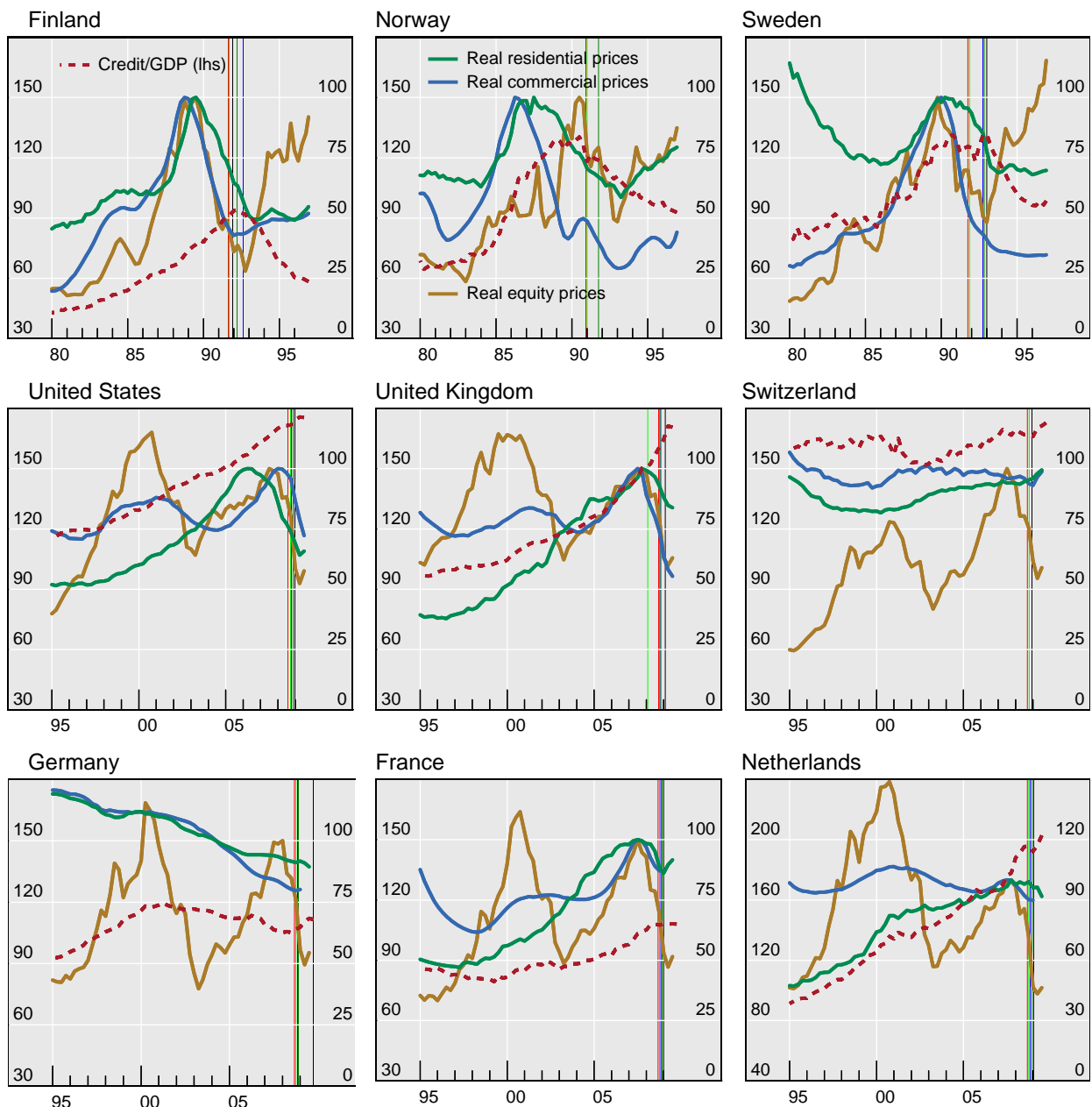
⁷ The information on resolution measures was collected at the BIS (see footnote 3). While the database covers 29 countries, the discussion below (and most Annex tables) focuses on the set of countries with the largest internationally active banking systems under significant stress, namely France, Germany, the Netherlands, Switzerland, the United Kingdom and the United States. Other countries also faced considerable rescue costs (Table A1) – including countries with smaller banks, as documented by Dermine and Schoenmaker (2010).

⁸ For instance, in the Norwegian case, government involvement in the initial stages of the crisis required ad hoc measures. But once a systemically important bank faced distress, the government promptly set up a new crisis management institution. Similarly, in Finland and Sweden, where the crises initially hit systemically important banks, the authorities established special government agencies to deal with the failing banks within a few months after it transpired that more than one large bank was affected.

⁹ The former schemes target banks close to insolvency and unable to raise capital in the market; the latter are open to all banks on more commercial terms.

especially those of real estate (Graph 1).¹⁰ A distinguishing feature of the current episode, however, is its cross-border dimension. In the Nordic case, crises were essentially domestic:

Graph 1
The financial cycle and banking crises

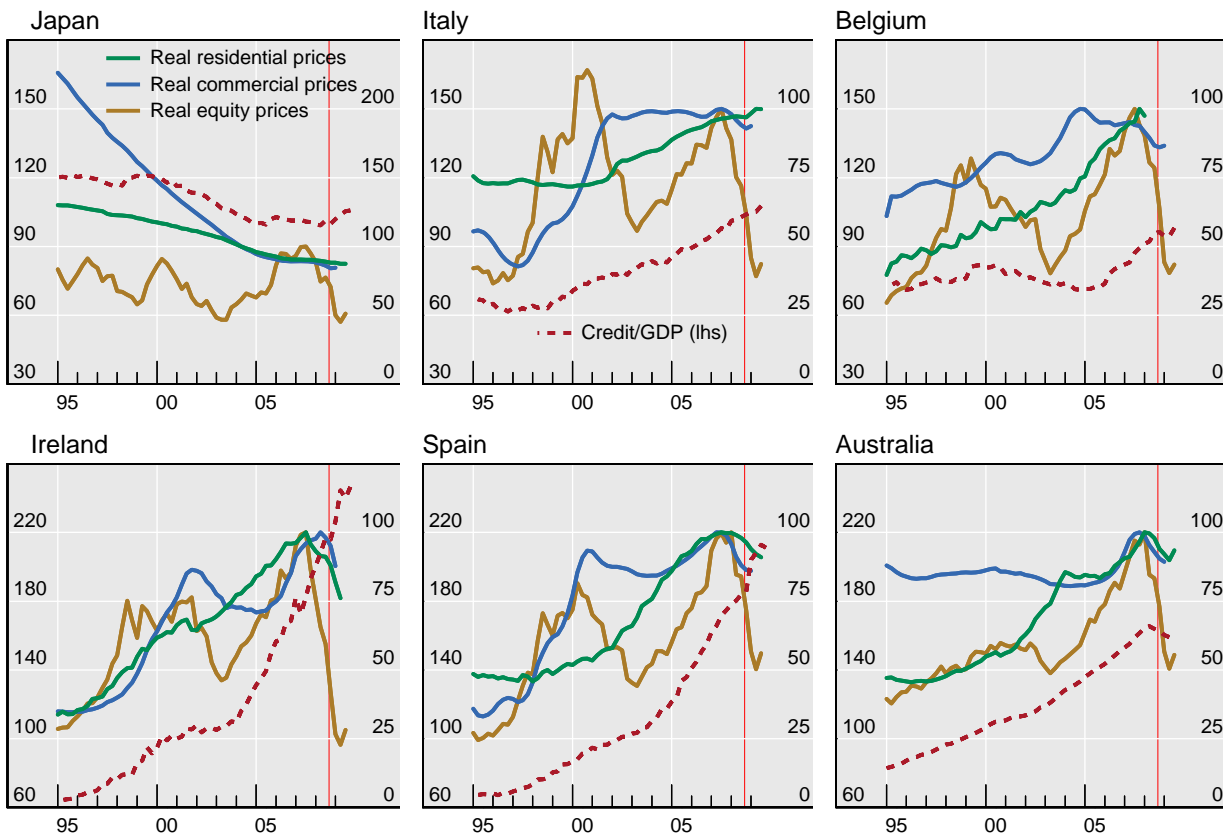


The asset price series are normalised by their respective peaks within a window around the banking crisis (Nordic countries: 1985–92; others: 2004–09). The vertical lines date the following events: red = main systemic event (Nordic countries: first major failure or rescue; others: Lehman Brothers bankruptcy); light green = first major government rescue and recapitalisation; green = general recapitalisation programme; blue = introduction of debt guarantees; black = first asset-side intervention (asset purchase or insurance scheme).

¹⁰ For discussions of the Nordic crises stressing this perspective, see Gerdrup (2004), Jonung et al (2006), Honkapohja (2009), Steigum (2004) and Sandal (2004); for the more recent crisis, see Borio and Drehmann (2009) and Reinhart and Rogoff (2009).

Graph 1 (cont)

The financial cycle and banking crises



The asset price series are normalised by their respective peaks in 2004–09. The vertical lines mark the Lehman Brother bankruptcy in September 2008.

Sources: Private real estate associations; national data; BIS calculations.

domestic banks incurred losses on domestic exposures.¹¹ In the current one, the losses in a number of banking systems were incurred on foreign exposures, even if in the home countries there was no sign of a major domestic financial cycle (Borio and Drehmann (2009)). For example, the financial distress faced by the German and Swiss banking systems largely reflected losses on US assets, as the United States was the epicentre of the crisis. By contrast, the crisis in the United Kingdom was mainly of domestic origin, although foreign exposures also played a role. The situation in other countries varied, falling between the US and Swiss extremes.

Relative to the financial cycle, the main systemic event took place earlier in the current crisis than in the Nordic precedent. The bankruptcy of Lehman Brothers on 15 September 2008 demonstrated that the crisis was systemic and global, in that the ensuing panic disrupted all major funding markets worldwide. This event occurred not much more than one year after property prices and equity markets had peaked, and well before credit aggregates turned

¹¹ Even though the crises remained largely domestic events, a global cycle also played a significant role in the crises of the late 1980s and early 1990s. Besides the Nordics, a number of other countries experienced serious financial strains or outright crises, including Japan, the United States, the United Kingdom and Australia.

and recessions set in.¹² Various country-specific events that might also be considered systemic, such as the run on Northern Rock and the rescue of Bear Stearns, occurred even earlier, as did liquidity pressures and valuation losses (see below). In the Nordic countries, by comparison, more time elapsed after asset prices peaked until a systemic event, typically the impending collapse of a major bank, pushed the authorities into action. By this time the economies were closer to the turn of the economic and credit cycle, if not well into the down leg. This difference emerges more clearly in the countries that recently faced home-grown problems, for which the comparison is more straightforward.

Following the first systemic event, the authorities reacted quickly, both then and now. Within a month, the Nordic countries had averted the collapse of systemic banks through targeted rescues and recapitalisations. Similarly, only one month elapsed in the current crisis before most countries enacted generalised (capital and guarantee) support programmes in the current crisis, open to all banks (see below), as the Lehman Brothers bankruptcy acted as a catalyst for global action. Until this watershed event, the authorities had intervened only on a case by case basis, limited to individual problem institutions (recapitalisations, assisted mergers), apart from providing general liquidity support. In fact, more time elapsed until the Nordic countries enacted general programmes for the recapitalisation of troubled institutions (seven to 13 months after the first systemic event) or in the form of blanket guarantees (11 and 12 months afterwards, respectively, in Sweden and Finland).¹³ This is apparent in Graph 1, which indicates that the various interventions were much more bunched in the current crisis.

As a result, interventions in the current crisis generally took place, if anything, earlier with respect to the turn in the financial cycle. The major interventions closely followed the systemic event, which also occurred rather early in relation to the financial cycle. By the time the authorities intervened, asset prices and, with the possible exception of Finland, the credit/GDP ratio had declined by less (if at all) than in the Nordic precedent.¹⁴

The interventions in the current crisis also generally took place earlier with respect to the objective insolvency of the institutions. The Nordic banks were closer to insolvency at the time of intervention. By the time the authorities reacted, they were either technically insolvent or seriously undercapitalised; indeed, one important motive for intervention was to raise banks' capital adequacy above Basel I minima (Annex 2). By contrast, most institutions in the current crisis maintained book capital well above regulatory minima (Table 1),¹⁵ although the capitalisation required by the market was arguably well in excess of these minima. The difference in the timeliness of the intervention is not surprising. Because events occurred earlier in the financial cycle, the quality of the loan books had not deteriorated as much. Moreover, the starting levels of capitalisation were also typically higher.

Thus, in terms of the timeliness of the intervention (P1), the management of the current crisis compares favourably with the Nordic experience, when measured in relation to both the financial cycle and bank health.

¹² This argument would only be *strengthened* if one were to regard *earlier* events as systemic, such as the rescue of Bear Stearns or Northern Rock, or the liquidity problems in the interbank market in summer 2007.

¹³ The various types of intervention did not play an equal role across the two crisis episodes. For instance, generalised capital injection programmes open to all banks, regardless of their capital strength, played a limited role in the resolution of the Nordic crises. This was due, in part, to differences in how the crises manifested themselves (see Section III). Similarly, the asset purchase programmes in the two episodes differ less in their timing than in their depth (see P2).

¹⁴ This is true both of the countries that recently faced home-grown problems, for which the comparison is more straightforward, and of the rest, which were initially hit by the cross-border ramifications of the turbulence.

¹⁵ This statement refers to the regulated banking sector; it may not hold for some other segments, such as US mortgage lenders and government-sponsored enterprises (GSEs).

Table 1

Bank solvency at the time of intervention

	FI	NO	SE	CH	DE	FR	BE+NL	UK	US
Equity ratio (% of assets)	<0 ¹	-2.1 ²	<0 ³	2.75	2.31	2.72	2.98	4.53	6.63
Regulatory capital ratio				14.90	8.32	10.63	14.45	11.80	12.19

The table shows weighted averages of total equity ratios (as a percentage of total assets) and regulatory capital ratios (Tier 1 + Tier 2 capital, as a percentage of risk-weighted assets) of those banks receiving government capital injections. For the current crisis, financial statements at end-Q3 2008 were used where available (and at end-Q2 2008 otherwise), before general recapitalisation programmes were enacted. For the Nordic countries (shaded), data are based on supervisory information. The banks included are: UBS for Switzerland; Bayerische Landesbank, Commerzbank, IKB Industriebank and WestLB for Germany; Crédit Agricole, Dexia Crédit Local, Groupe Caisse d'Épargne and Société Générale for France; ABN Amro Holding, Fortis, ING Group NV and KBC Group for Belgium and the Netherlands combined; HBOS, Lloyds and RBS for the United Kingdom; Bank of America, BB&T, Citigroup, Fifth Third Bancorp, Goldman Sachs, JPMorgan Chase, KeyCorp, Marshall & Ilsley, PNC, SunTrust, US Bancorp, Wells Fargo and Zions for the United States. BE = Belgium; CH = Switzerland; DE = Germany; FI = Finland; FR = France; NL = Netherlands; NO = Norway; SE = Sweden; UK = United Kingdom; US = United States.

¹ See Annex. ² End-of-period statements of book value of equity minus accumulated government capital injections, as a share of total assets, for Den Norske Bank, Christiania Bank and Fokus Bank. ³ Results of due diligence of Nordbanken and Gota Bank point to insolvency at the time of intervention.

Sources: BankScope; national data.

Principle 2: Comprehensive and in-depth intervention

The second principle advocates that intervention and resolution should be in-depth and wide-ranging. Consider the three stages identified in the previous section: stabilising the financial system, restructuring balance sheets, and re-establishing the conditions for sustained profitable operations. Table 2 provides an overview of the measures taken.

(i) Stabilising the financial system

In both cases, the authorities took comprehensive measures to stabilise the financial system and prevent its implosion. But reflecting the dynamics of the crises, the balance between the various forms of intervention differed considerably, notably in the role of liquidity and guarantees, as well as in their timing.

Liquidity support operations have been much more prominent in the current crisis. In the Nordic crises, liquidity support was used mainly to complement the resolution of individual institutions.¹⁶ By contrast, the hallmark of the recent crisis has been the unprecedented and generalised liquidity support extended by central banks, both within and across borders, and on a scale well beyond that provided as part of the rescue operations for individual institutions (Borio (2008), Borio and Nelson (2008), BIS (2008, 2009), CGFS (2009)). Indeed,

¹⁶ The main exception was the provision of support in foreign exchange by Norges Bank as well as by Sveriges Riksbank in 1991–92, as domestic banks found it difficult to roll over foreign currency debt in international markets.

Table 2

Bank rescue packages

	AU	BE	CA	CH	DE	FR	ES	IE	IT	JP	NL	UK	US
Deposit insurance													
Capital injections		✓		✓	✓	✓		✓	✓	✓	✓	✓	✓
Debt guarantees ¹	✓+	✓			✓	✓	✓	✓+			✓	✓	✓
Asset programme ²	(✓)	✓	(✓)	✓	✓	✓-	(✓)	✓		(✓)	✓-	✓-	✓+

Shaded areas represent general bank rescue packages (or expanded deposit insurance schemes, respectively). Ticks indicate actual usage, ie specific actions taken either under the programme or as standalone actions. Example: the recapitalisation of UBS is shown as a tick in an unshaded area in the column "CH", since it was a standalone action (there was no general recapitalisation programme). AU = Australia; BE = Belgium; CA = Canada; CH = Switzerland; DE = Germany; ES = Spain; FR = France; IE = Ireland; IT = Italy; JP = Japan; NL = Netherlands; UK = United Kingdom; US = United States.

¹ ✓ = guarantee on new issuance; ✓+ = guarantee also covers outstanding stock of debt. ² ✓ = actual asset purchases or insurance; ✓- = asset insurance only; ✓+ = actual purchases *and* insurance; (✓) = asset purchases conducted as part of a programme for supporting key credit markets (rather than specific banks).

Sources: Central banks; government sources; press reports.

liquidity support started well before solvency problems became fully apparent. The crisis was heralded by the freezing of interbank markets in August 2007, which prompted the central banks into action. This was one whole year *before* the adoption of comprehensive recapitalisation plans. The support then intensified and became international in scope following the bankruptcy of Lehman Brothers. Swap lines between central banks played a major role throughout, reflecting the need to provide funding in foreign currencies, especially in US dollars (McGuire and von Peter (2009), Baba and Packer (2009a,b)). At the time of writing, extraordinary liquidity support is still in place.

Public guarantees have played a major role in both episodes. If anything, they were more extensive in the Nordic case. In that episode, in addition to debt guarantees on specific issues as part of the resolution of individual institutions, the Swedish and Finnish governments issued a formal *blanket* debt guarantee covering all bank liabilities (other than equity); in Norway, while no such formal guarantee was put in place, the government declared that it would take all measures necessary to safeguard the financial system. In the current crisis, in addition to extended deposit insurance (Annex Table A2),¹⁷ most countries have put in place fee-based debt guarantee schemes on *new* issuance to support wholesale funding (Annex Table A3).¹⁸ The programmes have been designed with high ceilings. Among

¹⁷ Schemes were strengthened in more than 20 countries. The coverage limits on retail deposits were raised considerably, in some cases to become unlimited, as in Germany and the United States (Annex Table A2). And co-insurance was abolished in several countries (eg in the Netherlands and the United Kingdom) to remove any residual incentive to withdraw deposits and for competitive considerations. In general, the role of retail deposit insurance schemes has been more prominent in the current crisis than in the Nordic precedent. In Sweden, no retail deposit insurance scheme was in place or introduced during the crisis of the early 1990s. And in Norway and Finland, existing arrangements were not modified at the time.

¹⁸ Another important type of public guarantee, which does not fall neatly into this taxonomy, was that issued in the United States on 19 September 2008 to stabilise the funding of money market mutual funds. Investors in money market mutual funds are both retail and wholesale, although the evidence suggests that withdrawals were mainly by wholesale investors. The run on money market mutual funds translated into US dollar funding difficulties for banks, especially European ones (Baba et al (2009)).

the major banking systems, only Switzerland and Japan have not enacted general programmes, although Switzerland has announced its willingness to do so. Moreover, less formal guarantees have been in place too. For instance, the G7 finance ministers and central bank Governors agreed to “take decisive action and use all available tools to support systemically important financial institutions and prevent their failure”, among other things (G7 Plan of Action, 10 October 2008).

A striking difference between the two episodes is the timing of the introduction of the guarantees. In particular, in Finland and Sweden the blanket guarantees *followed* the first systemic event with a considerable lag (see above). By contrast, in the current crisis, aside from liquidity support, the guarantees were the first measure taken, in some cases alongside recapitalisation schemes (Graph 1). This seems largely to reflect the more international nature of the current crisis, as the blanket guarantees in the Nordic countries were introduced once access to foreign funding was threatened. Until that point, as in Norway, the brunt of the stabilisation was borne by measures to resolve individual systemic institutions through a combination of recapitalisations, transfers of control, and government-facilitated mergers sometimes supported by central bank liquidity assistance.

(ii) Restructuring the balance sheets

The priorities in balance sheet restructuring have differed considerably in the two episodes. In the Nordic crises, losses were addressed comprehensively, through writedowns of bank assets; the system was recapitalised; and mechanisms were put in place to manage the bad assets effectively. By contrast, in the current crisis, while substantial efforts have been made to recapitalise the banks, the writedown and management of bad assets have so far not proceeded as swiftly.

The need to recapitalise the institutions has been a priority in both cases. In the Nordic crises, the amount of capital injected amounted to 5.1% of GDP in Finland, 2.2% in Sweden and 1.8% in Norway (see Annex 3 for details). The bulk of these injections were targeted at individual institutions; those available to all banks on commercial terms were equivalent to 1.6% of GDP in Finland, but only 0.14% in Norway, with none in Sweden. In the current episode, public schemes took over after it became apparent that banks' own efforts to raise capital were lagging behind mounting losses (Panetta et al (2009)). The total amount of government capital injections has ranged from nothing (eg Australia) to \$746 billion (United States). While most programmes focused on large troubled banks, the US Capital Purchase Program was the most generalised scheme, providing capital to more than 500 banks of all sizes. As with debt guarantee schemes, several recapitalisation programmes (in Europe, not in the United States) were open to subsidiaries of *foreign* banks and, in some cases, to insurers and other financial institutions (Annex Tables A4–5). Since the introduction of these schemes in October 2008, public capital injections have helped to bring total recapitalisations almost to the level of announced losses.¹⁹

However, these amounts do not tell the whole story. In some countries, explicit capital injections have been complemented by asset insurance programmes, which amount to implicit capital support. Asset insurance was made available to selected banks in Germany, the Netherlands, the United Kingdom and the United States (Annex Table A6). In exchange for an insurance fee, the government assumed a share of future losses (typically 80–90%) on a designated portfolio, with the bank absorbing the first loss (Table A6). Although the assets remain on the bank's balance sheet, the tail risk is transferred almost entirely to the public. By its very nature, the value of the insurance, and corresponding capital support, is harder to

¹⁹ The public recapitalisations of banks listed in Annex Table A5 alone make up roughly 65% of total capital injections recorded since the onset of the crisis. (The cumulative recapitalisations for the banks and broker-dealers quoted on Bloomberg amounted to \$789 billion by end-2009.)

measure and varies over time with market conditions. As booked, it has led in several cases to increases in Tier 1 ratios exceeding 1 percentage point (Panetta et al (2009)).

The treatment of actual and potential losses has been quite different in the two episodes. In the Nordic crises, the authorities went a long way to ensuring that losses were booked, even at the cost of erring on the conservative side. In both Norway and Sweden, for instance, accounting practices were tightened.²⁰ In the three countries, one of the preconditions for government capital injections was that banks' equity be written down according to losses, as determined by stringent separate examinations. In Sweden, once the Government Bank Support Board started to operate, banks applying for support would have their condition evaluated systematically to assess expected losses and prospects over the long term. The outcome would determine the banks' fate (recapitalisation by shareholders, recapitalisation by the government, restructuring and acquisition by another bank, or in the extreme case liquidation) (Ingves and Lind (1996)).

In the current crisis, efforts have not been as in-depth and systematic. In response to the crisis, accounting standard setters introduced a series of changes to mitigate the adverse impact of falling asset markets on institutions' financial accounts.²¹ To the extent that accounting practices have been adjusted, they have therefore given banks *greater* room for manoeuvre to avoid recording valuation losses. In particular, in October 2008 the International Accounting Standards Board (IASB) issued amendments to IAS 39 and IAS 7 to permit reclassifications of debt securities to the loan book (measured on a cost basis), if there is an intention and ability to hold the assets to maturity. This made it easier for banks to move troubled assets out of those books that require the application of fair value.²² The positive stock market reaction to this partial suspension of fair value accounting suggests that investors perceived mark to market accounting as aggravating the risk of bankruptcy (Amel-Zadeh and Meeks (2009)). Similarly, banks made extensive use of the flexibility of FAS 157 on the use of non-market information for determining fair value of securities (Laux and Leuz (2010)), and the corresponding Financial Accounting Standards Board (FASB) announcements were followed by large excess returns among banks with large exposure to mortgage-backed securities (Huizinga and Laeven (2009)).

The only major effort to evaluate asset quality in a systematic way was the stress test conducted jointly by the US authorities for the 19 largest US bank holding companies (accounting for two thirds of domestic assets) in April–May 2009. The test assessed banks' capital needs to ensure their continued ability to lend in the event of adverse developments over a two-year horizon; depending on the outcome, banks would need to raise capital, either from private sources or as part of the Treasury's Capital Purchase Program. In the event, the results required 10 banks to raise a combined \$75 billion within half a year. The favourable market reaction indicates that the stress test contributed to restoring confidence in the US banking system.²³

²⁰ Norway had tightened its rules for recording losses in 1987, a few years before the crisis became truly systemic. In Sweden, the Financial Supervisory Authority tightened its rules for the definition of probable losses as well as for the valuation of real estate (Ingves and Lind (1996)).

²¹ A chronology of the crisis response is provided at <http://www.iasb.org/Financial+crisis>.

²² The accounting treatment of financial assets depends in part on their intended use. Those held for trading or "available for sale" are carried at fair value and marked to market (or marked to model, if orderly market prices are unavailable); and debt securities that are held to maturity are recorded at amortised cost (and are adjusted for incurred loss in case of impairment). Laux and Leuz (2010) provide a comprehensive treatment.

²³ Based on the publicly available data, the methodology was considered sound, although questions arose regarding banks' self-reported data (Congressional Oversight Panel Report, 9 June 2009). And when US unemployment hit 9.4% in May 2009, concerns were voiced that the economy might deteriorate more than

As a result, at the time of writing, considerable uncertainty remains about the state of balance sheets. Recent estimates of global bank losses are subject to uncertain macroeconomic prospects, further deterioration in loan books, and cross-country differences in reporting and accounting practices (eg IMF (2009)).²⁴ Contributing to this uncertainty and doubt has been the slow speed at which bad assets have been removed from banks' balance sheets and disposed of. True, asset purchases have been only one element in a number of packages. Several governments have supported key financial institutions by purchasing impaired assets or by providing insurance against losses on designated portfolios (Annex Table A6). Purchases were conducted most prominently in Switzerland (UBS). The assets were absorbed by a special purpose entity funded from public sources, with the first loss borne by the participating bank through a capital contribution to the entity. But purchases to date have been few, and limited to standalone actions, notably those in the case of AIG in the United States. The generalised asset purchase programmes formulated so far have *not* been used widely.²⁵ The Public-Private Investment Program (PPIP) in the United States remained very small and is currently inactive; under Germany's programme, only one bank (WestLB) is in the process of transferring assets to an asset management company (Table A6).

This contrasts sharply with experience in the Nordic countries. At the time, the authorities set up bad banks or asset management companies (AMCs) to deal with losses in a systematic way. Both Finland and Sweden took this route (Annex 2). Public funding for the AMCs amounted to 6.6% and 1.8% of GDP in Finland and Sweden, respectively (Annex 3). In Norway, however, distressed assets were worked out within the institutions.

Importantly, the removal of assets in Finland and Sweden was not primarily aimed at dispelling uncertainty about the underlying condition of the banks; rather, it reflected operational considerations. Uncertainty had been dispelled through tough scrutiny of the accounts. The purpose of the transfer was to enable management to focus on bringing the healthy parts of the bank back to profitability, instead of having to worry about extracting value from bad loans.²⁶ Crucially, the troubled assets were transferred to the AMCs *after* the government had assumed control of the institutions. And with one exception in Finland, the AMCs themselves were effectively fully owned and funded by the government (Annex 2). Government control in turn facilitated the transfer. Since the distressed bank and the entity receiving the assets were both publicly owned, the pricing of the transfer became less of an issue, as it did not determine gains and losses for different parties. This avoided the information and incentive problems that have complicated transfers in the current crisis.

(iii) Re-establishing the conditions for sustained profitable operation

The two episodes also differ substantially in terms of the priority given to re-establishing conditions for sustained profitability by seeking to reduce excess capacity, promoting

envisaged in the adverse scenario of the stress tests, which assumed an 8.9% average unemployment rate in 2009 (while the actual rate has exceeded 9% in every month since May 2009).

²⁴ The total loss estimates from 2009 lie in the range of \$2–5 trillion (see Deutsche Bundesbank (2009)). The cumulative writedowns recorded on Bloomberg at end-2009 amounted to \$1.174 trillion for financial institutions (excluding GSEs), and \$0.849 trillion for banks and brokers (excluding GSEs and insurers).

²⁵ The main exception has been the resumption of the Japanese stock purchase programme. A clear example of the difficulties in implementing the programmes is the chequered history of the Troubled Asset Relief Program (TARP) in the United States. Despite its initial purpose, the facility has not been used to purchase troubled assets but rather to directly recapitalise banks.

²⁶ Operational considerations and concerns over gross fiscal costs explain why assets were not transferred out of the institutions in Norway. Typically, the staff of the AMC would be recruited largely from the bank that set it up, implying a drain in personnel. Partly for that reason, and because internal resources were deemed sufficient for working out distressed assets, assets were managed internally in the Norwegian case.

operational efficiencies and limiting competitive distortions. This was an important consideration in the resolution of the Nordic crises but has not figured prominently in the current one.

The difference in priorities emerges most clearly from the *conditions* attached to the support packages (Tables 3 and A7). In the current crisis, conditions were largely limited to restrictions on dividends²⁷ and compensation.²⁸ Moreover, a number of countries followed France's lead and required banks receiving public capital to extend a *greater* volume of domestic loans. No growth limits over the medium term were imposed, and banks were not required to split or sell off subsidiaries, with only a few doing so voluntarily. Similarly, while priced, debt guarantee schemes featured only light restrictions to address competitive distortions. The partial exception to this general picture is the conditions imposed by the competition authority in Europe to promote a level playing field.

EU member states are obliged to have support packages reviewed by the European Commission, which seeks to guard against excessive distortions of competition within the Single Market (European Commission (2008)). State aid must be minimal, temporary, remunerated and non-discriminatory (allowing programmes to be accessed by foreign subsidiaries), and may require measures against expansion or aggressive market strategies by which beneficiaries might take advantage of public support. To accommodate the urgency of crisis management, the Commission moved rapidly and predominantly adopted "decisions not to raise objections", thus viewing most rescue packages as necessary for avoiding "a serious disturbance" to the respective member states in line with EC Treaty State aid rules.²⁹ In a few cases, the Commission launched in-depth investigations to determine whether the packages constitute State aid and assessed their compatibility with the EC rules on rescue and restructuring aid. This way, certain compensatory measures, such as higher fees or reductions in size or in the scope of activities, were worked into the final rescue packages (as in the cases of ING, WestLB and Landesbank Baden-Württemberg, respectively). While the European Commission thereby contributed to limiting competitive distortions across institutions, its aim was never to reduce excess capacity for the system as a whole – indeed, the Commission *encouraged* the use of state aid to counteract a credit crunch.³⁰

By contrast, the Nordic authorities from the outset adopted various restrictions to eliminate excess capacity and address competitive distortions. Conditions included balance sheet contraction targets, the disposal of branch networks and foreign operations as well as other restructuring and cost-cutting measures (Table 3 and Annex 2). The only partial exception was Finland's *general* capital injection scheme, in which almost all banks took part. Here, one of the conditions was to show flexibility towards borrowers that faced difficulties servicing their debt, provided that the banks' solvency was unimpaired. The consequences of the

²⁷ Only the UK scheme prohibited the payment of dividends to common shareholders. Other countries included more lenient restrictions on dividends, possibly for fear of rendering common equity unattractive to private investors.

²⁸ These were not always accompanied by hard limits. The problems with interference in private contractual arrangements were illustrated by the case of AIG.

²⁹ The individual decisions are summarised in European Commission (2010), and placed in context by Petrovic and Tutsch (2009) and Beck et al (2010).

³⁰ The Commission's guidance on recapitalisations recognises the role of public capital injections to prevent credit supply restrictions as one important objective (European Commission (2009)). Indeed, the Official Journal of the European Union (2009/C 83/01) states: "Member States need to use the leverage they have acquired as a result of providing substantial financial support to the banking sector to ensure that this support does not lead merely to an improvement in the financial situation of the banks without any benefit to the economy at large. Support for the financial sector should therefore be well targeted to guarantee that banks resume their normal lending activities. The Commission will take this into account when reviewing State aid to banks."

tough conditions associated with the Nordic episode are clearly visible in several indicators (Graph 2). The number of banks and branches as well as bank employment declined significantly following the policy interventions. And partly as a result of the enforced restructuring of loan books, the ratio of credit to GDP fell somewhat in all three countries after the government rescue plans went into force.

Table 3

Comparison of conditions associated with bank rescue packages

	CH	DE	FR	NL	UK	US	FI	NO	SE
Limits on compensation/bonuses	✓	✓	✓	✓	✓	✓	✓		
Restrictions on dividend payments		✓			✓	✓		✓	✓
Replacement of management/board				✓	✓		(✓)	✓	✓
Recapitalisation target	✓	(✓)		(✓)	(✓)		✓	✓	✓
Loan modification scheme						✓	✓		
Additional lending requirements		✓	✓	✓	✓	✓			
Contraction of balance sheet						(✓) ¹	(✓)	✓	
Disposal of branches/foreign operations							✓	✓	
Cost-cutting measures							✓	✓	✓
Restructuring of funding							✓		
Forced writedowns of shareholder equity		(✓)					(✓)	✓	(✓)
Nationalisation		(✓)			✓	(✓) ¹	✓	✓	✓

✓ denotes that a condition is being applied in the country shown in the column. (✓) denotes a partial application of a condition (in the case of recapitalisations, the brackets denote qualitative (not quantitative) targets). Annex Table A7 provides further details on the conditions associated with individual bank rescue packages. For country codes, see Table 1.

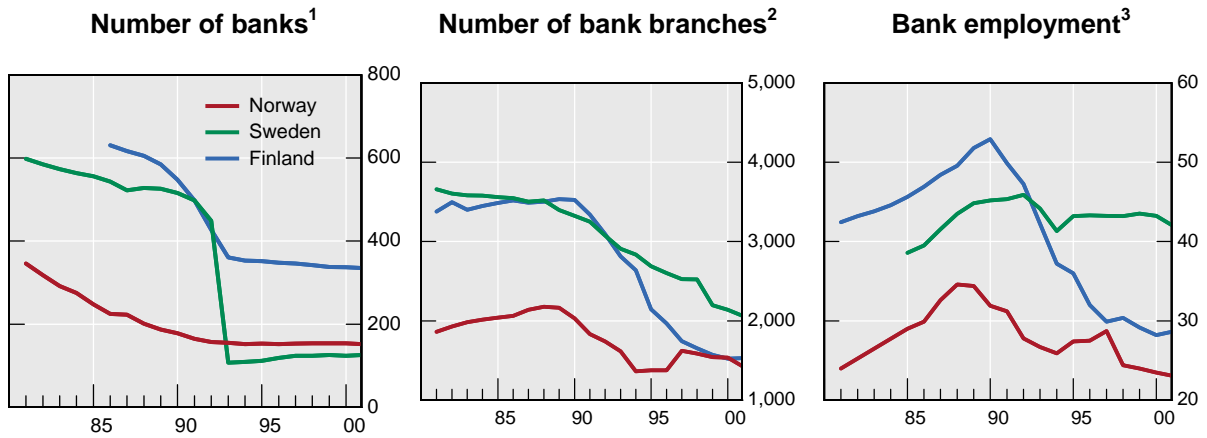
¹ Applied only in the context of GSEs placed in conservatorship.

Sources: Central banks; government sources; press reports.

Thus, in terms of the comprehensiveness and depth of the intervention (P2), significant differences emerge. In both cases, the authorities successfully stabilised the financial system. But, in the current crisis, the assets side of the institutions' balance sheets has not been addressed as systematically as in the Nordic case. Nor has much attention been paid to reducing excess capacity and laying the basis for sustained profitability.

Graph 2

Restructuring of the Nordic banking systems



¹ Deposit-taking institutions, including commercial, savings and various types of mutual and cooperative banks. ² Deposit-taking institutions. ³ In deposit-taking institutions; in thousands.

Source: National data.

Principle 3: Balancing systemic costs with moral hazard

The differences in the authorities' attitudes towards balance sheet adjustment and the removal of excess capacity point to another difference between the two episodes: in striking a balance between containing moral hazard and sustaining aggregate demand, the Nordic authorities took a tougher stance than policymakers during the current crisis.

This is perhaps less apparent from the treatment of the various stakeholders. Creditors have been protected throughout in the two episodes, with the notable exception of the failure of Lehman Brothers and some larger failed US banks in FDIC receivership.³¹ In fact, while extended rather late in the game, the blanket guarantees in two of the Nordic countries show a more favourable treatment of creditors.³² But shareholders and managers suffered comparatively more in the Nordic episode. To be sure, shareholders have incurred sizeable market losses in the recent crisis (King (2009)); capital injections in the form of preferred shares have eaten into profits; some (eg Germany) have passed legislation to facilitate equity writedowns in view of nationalisation; and some countries (eg the United Kingdom) have imposed tougher conditions on banks than others (see Annex tables). In addition, managers have seen their compensation restricted and have sometimes been dismissed. But the generally less inhibited attitude towards (temporary) government control in the Nordic countries went hand in hand with a systematically tougher stance towards both shareholders

³¹ This includes the 50% loss on uninsured deposits at Indymac Bank, and losses on subordinated debt issued by Washington Mutual Bank. Small US bank failures were typically resolved with no losses to creditors.

³² In the Nordic countries, when subordinate debt holders were left whole, this was partly due to the absence of legal means to write down their claims. However, it most likely also reflected a fear of increasing the systemic costs. A large part of subordinated debt was held by foreign investors, and there was a concern that writing down their claims could undermine efforts to cajole foreign banks into rolling over their claims on Nordic banks.

and management. Compulsory writedowns and dismissals were the norm, and legal obstacles were quickly removed.³³

In fact, the government ownership and control option has been used only sparingly in the current crisis, while it was an integral part of resolution in the Nordic case. In some cases majority ownership has been assumed (eg RBS, AIG, Fortis Nederland) while leaving control in private hands; in others the government has taken control (GSEs in conservatorship) while leaving shares in private hands. Few outright nationalisations, combining public ownership and control, have taken place. The individual cases that have occurred, including Northern Rock and Bradford & Bingley in the United Kingdom, Hypo RealEstate in Germany and a few additional ones in other EU countries, have required legislation to be passed (Petrovic and Tutsch (2009)).

The different balance between restraining moral hazard and sustaining aggregate demand emerges even more clearly from the conditions associated with the rescue packages (Tables 3 and A7). In the Nordic countries, the conditions for government capital injections usually included the replacement of bank management and the board and, as noted, required restructuring, a contraction in the recipients' balance sheet, activities and costs. This was much more restrictive than the conditions on dividends and compensation that have been the norm in the current crisis. Moreover, only in the generalised recapitalisation scheme in Finland was there any reference to avoiding an unnecessary tightening of lending terms. By contrast, lending targets have been much more prominent in current programmes.

To be sure, the Nordic authorities were not oblivious to the short-term macroeconomic impact of their actions. Efforts to stabilise conditions, even at the cost of introducing unappealing blanket guarantees, attest to this. Managing the disposal of bad assets according to principles of inventory management points in the same direction; a widespread sale of assets across banks and AMCs could have further depressed asset prices, undermining the solvency of other asset holders and weakening the economy further. Nor is it a coincidence that the capital injection scheme most supportive of aggregate demand was adopted in Finland, the country that suffered the deepest recession of the three.³⁴ But their regard for short-term macroeconomic developments did not prevent the authorities from attaching high priority to the long-term consequences of their measures, and hence to the need to address excess capacity and competitive distortions.

III. The Nordic crises and today's: why did the responses differ?

The foregoing analysis suggests that the policy response to the current crisis has, if anything, been even prompter than that in the Nordic countries but less comprehensive and in-depth. While extended deposit insurance and debt guarantees have stabilised the funding side, progress in addressing the *assets* side of banks' balance sheets has been more limited. The cleansing of balance sheets has proceeded slowly, and little attention has been paid to reducing excess capacity. The authorities have been less attentive to avoiding competitive distortions between those institutions receiving (explicit *and* implicit) support and the rest. They have given higher priority to sustaining aggregate demand in the short term than to the

³³ As a rule, if the audited balance sheet showed that a bank's equity was negative, the original shares were wiped out. There were, however, two significant exceptions to this principle: one in Finland (*Skopbank*) and one in Sweden (*Nordbanken*). See Annex 2 for details and reasons for the deviations from this principle.

³⁴ Norway also initiated some general bank support and a general government capital injection programme aimed at commercially sound banks. The second initiative, however, played only a minor role, and there were no conditions attached to it similar to those in Finland.

longer-term desiderata of encouraging adjustment in the financial sector and avoiding moral hazard. What might explain these differences?

We next consider four, possibly complementary, explanations: macroeconomic conditions; the international dimension of the crisis; the complexity of the assets involved; and the dynamics of the crisis, as influenced, in particular, by accounting conventions.

Macroeconomic conditions

One possible explanation of the difference in response is the severity of the recent downturn. Most of the economies hit by the financial crisis have experienced one of the worst recessions in the postwar period. In the sample of countries considered, output losses have ranged from 1.4% (France) to 18.8% (Ireland). Moreover, the contraction has been highly synchronised internationally. This could help explain the priority given to sustaining lending and aggregate demand at the expense of encouraging adjustment in balance sheets and excess capacity. After all, it was precisely in Finland, the crisis-ridden country experiencing the worst recession among the Nordics, that the authorities implemented an additional *general* capital injection scheme with conditions that favoured lending and the macroeconomy.

This argument has an element of truth, but can easily be overstated. First, the Finnish scheme was small compared with the rest of the solvency support in the country, for which conditionality was much stricter, even though the country was then experiencing a *bigger* recession than the typical one during the current crisis. Moreover, the terms were not as supportive of new lending as those of many current schemes. A further motivation for its adoption was to level the playing field between institutions that had received support and the rest. This helps to explain why it was aimed at solvent, well functioning banks. Second, while Norway's recession was comparatively mild, Sweden's was not. Finally, in contrast to the current episode, the Nordic countries had entered recession well before the onset of the crisis. Further, their other macroeconomic policies were also more contractionary, not least from the need to defend currency pegs. If anything, this suggests that their policymakers should have been more inclined to favour support over adjustment at that time.

The international dimension of the crisis

The recent crisis, in contrast to the Nordic ones, has been truly international. It spilled over across borders with unprecedented speed and intensity and, above all, it engulfed institutions whose operations were much more international than those at the centre of the Nordic episode. This reflects the growing globalisation of the banking industry since then (eg McGuire and von Peter (2009)). As a result, it was common for the rescue schemes to cover foreign subsidiaries too (as required by the European Commission). This is clearly the case for deposit insurance (Table A2), debt guarantees (Table A3) and, albeit to a lesser extent, recapitalisation programmes (Table A4).

The international nature of the crisis has complicated resolution in at least two ways. First, there is to date no workable regime for the orderly resolution of an internationally active financial institution with substantial cross-border operations (Basel Committee (2009)), as the disorderly bankruptcy of Lehman Brothers shows. The orderly wind-down of such an institution is not yet feasible. Even within the more homogeneous framework of the European Union, the Fortis break-up illustrated the complexities involved. Second, as the crisis threatened to rampage across borders from its origin in one major global financial centre, the policy response in each country had knock-on effects in others, owing to the pressure felt by the authorities to follow suit. Hence, for example, the rapid spread of wholesale debt guarantees and of measures to strengthen retail deposit insurance schemes. In a globalised financial system, such copycat behaviour reflects not only a desire to insulate the domestic banking system from foreign disturbances, but also a reluctance to put it at a competitive

disadvantage. Taken together, these two factors would have encouraged greater leniency, especially with respect to the larger, internationally active institutions.

There is little doubt in our mind that the international dimension has played an important role. But, by itself, it cannot explain why the authorities have not been swifter in transferring bad assets out of banks' balance sheets. Moreover, a more lenient attitude than in the Nordic countries' experience has also prevailed in relation to institutions with purely domestic operations and in market segments better shielded from foreign competition, such as Northern Rock or IKB.

The complexity of the assets involved

Since the early 1990s, the financial system has grown more complex. First, in addition to the international linkages noted above, one of the hallmarks of the current crisis has been the role of credit transfer instruments, especially structured credit products (eg Borio (2008), Brunnermeier (2008), Duffie (2008), Gorton (2009)). These products are very hard to value with any degree of certainty, in particular when markets dry up (eg Fender and Tarashev (2008), Gorton (2009)). They also have complicated structures whose legal underpinnings had not been tested under stress before the crisis broke out. Moreover, they are widely held by heterogeneous investors. Second, and partly as a result, some national financial systems have grown increasingly opaque, through complex interlinkages, making it hard to know where risks are actually located and how they might spread.

These features no doubt complicate the resolution of distress. The nature of the instruments has made it harder to obtain reliable prices for their removal from distressed institutions, notably by exacerbating information and incentive problems. The failure, in the United States, of the TARP to achieve this objective is a clear case in point. The dispersion and fragmentation of these instruments across a large number of investors, coupled with the length of the securitisation chain, has made it more difficult to restructure and dispose of the bad assets, whether through aggregator schemes or otherwise. And the greater opacity at the heart of the crisis may have added to the incentive to refrain from taking drastic actions, for fear of unpredictable contagion.

At the same time, these factors can explain only part of the story. In particular, the transfer and management of bad assets would have been simpler had government control played a larger role in the current crisis, as in the Nordic example. And it is all too easy to overestimate the degree to which the greater opacity of the financial system may have encouraged leniency. Unpredictable and destabilising responses are part and parcel of all crises, as they were in the Nordic episode.

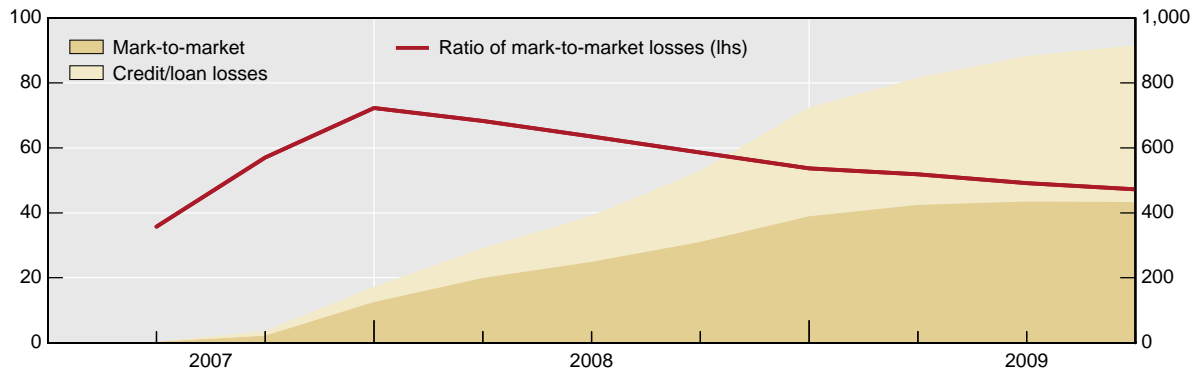
Fair value vs amortised cost accounting and the dynamics of the crisis

In our view, an important missing piece of the puzzle has to do with the effect of accounting practices on the dynamics of the crisis. The losses in the Nordic crises were largely incurred on loans accounted on an amortised cost basis. By contrast, the losses during the current crisis were initially incurred on securitised claims, notably structured products, recorded on a fair value basis. By end-2007, over 70% of banks' cumulative losses were still of this nature (Graph 3); it was only as events unfolded that the share of losses on loans recorded on an amortised cost basis started to grow (reaching 53% by Q3 2009). Fair value accounting recognises losses much earlier than amortised cost accounting does: it does not require a clear credit event or impairment test to trigger recognition. As soon as market participants anticipate a future default (or illiquidity), the price of the security falls. Moreover, its decline is typically amplified by surging risk aversion and compounded by distress sales.

Graph 3

Composition of losses among major financial institutions¹

In billions of US dollars (rhs); in per cent (lhs)



¹ Losses recorded on Bloomberg (page WDCI) among major financial institutions (including banks, brokers and insurers but excluding GSEs), identified by loss category. Credit and loan losses are calculated as (COST+LEV+RES+MTGE+PRI), where COST = credit costs, loan charge-offs and increased provisions; LEV = leveraged loans and collateralised loan obligations; RES = residential mortgage asset writedowns (including writedowns on home equity claims); MTGE = uncategorised mortgages; and PRI = prime mortgages and securities. Mark to market losses comprise the remaining identified losses (including all categories of asset-backed securities, credit default swaps, collateralised debt obligations, structured investment vehicles and trading losses) and are expressed, in the red line, as a ratio to total identified losses (TOTAL-UNS-OCI), where UNS = unspecified and OCI = revaluation reserve and other comprehensive income.

Source: Bloomberg.

This has affected the dynamics of the crisis in at least three ways. First, it has brought its timing forward relative to the typical financial cycle and the strength of the economy.³⁵ Second, it precipitated the unprecedented liquidity crunch that marked the onset of the crisis (eg Borio (2008, 2009)). In early August 2007, the evaporation of market liquidity (ability to trade) for structured products triggered the evaporation of funding liquidity first for the investment vehicles holding them and, soon afterwards, for the banks themselves.³⁶ Finally, it meant that, once the authorities intervened to address capital shortages, many institutions had been wounded, but their levels of capitalisation were still well above regulatory minima (Table 1, and BIS (2009, Chapter III)). The valuation losses had been recorded, but not the looming ones on the typically much larger loan portfolios (and on those securitised claims treated in a similar way). This was in stark contrast with the experience in the Nordic countries, when in the absence of significant fair value losses, intervention took place later in the financial cycle and when institutions were either technically insolvent or more seriously undercapitalised.

These dynamics inevitably had an impact on resolution.

On the one hand, they reduced the *ability* of the authorities to enforce adjustment. It is easier to enforce adjustment if institutions are objectively close to insolvency. When they are not, supervisors may lack the necessary powers to intervene, and/or shareholders may resist

³⁵ This is not to deny that some market price movements overshot to some extent, especially in view of the vigorous monetary, financial and fiscal response that followed. But the point made in the text concerns the *timing* of losses in relation to the financial cycle and to unrealised losses in the loan books.

³⁶ The sharp decline in asset prices may also have undermined banks' ability or willingness to sell illiquid assets and continue lending, thus exacerbating illiquidity (Diamond and Rajan (2009)).

intervention they see as an infringement of their property rights. (These are issues that prompt corrective action is supposed to address, although this mechanism is not available in most countries).

On the other hand, the dynamics may also have weakened the authorities' *willingness and incentive* to enforce adjustment. There was less of a perceived need for them. The funding disruptions caused by valuation losses may have clouded the authorities' interpretation of the underlying problems. The liquidity crisis took centre stage; the looming solvency problems lurked more nebulously in the background. The prevailing view was that the sharp asset price declines would be temporary; markets had wildly overshot.³⁷ As a result, the financial system could be restored to health by the provision of sufficient liquidity and insurance support. And even as the underlying solvency issues became more apparent, this view naturally played down the role of the accumulation of excess capacity during the boom.

Overall assessment and possible implications

This analysis suggests that several factors interacted to explain why the balance of the policies adopted to resolve the current banking crisis has differed from that seen during the Nordic precedent. In particular, we have highlighted the international dimension of the crisis, the complexity of the instruments at the heart of the disruptions and, above all, the effect of accounting practices on the dynamics of the crisis. These factors have all led the authorities to give greater weight to sustaining lending and aggregate demand in the short term than to encouraging adjustment and reducing excess capacity in the financial sector with an eye to the long term.

In a number of jurisdictions, these factors have reinforced others that point in the same direction. One such additional factor is deep-seated political resistance in some jurisdictions to greater government ownership and control, even if intended as temporary. Although unquantifiable, this factor has played a major role in shaping the political approach towards bank resolution in some countries. It has, for instance, led to a preference for assisted mergers between already large institutions over any form of public control or resolution. Another factor is a view of the crisis that has tended to emphasise the role of exogenous "shocks" that depress activity below equilibrium. This view underestimates the part that distortions played in the allocation of capital and in the expansion of balance sheets that led, ultimately, to the build-up of unsustainable imbalances.

A natural question to ask is what the consequences of this difference in policies might be. If the Nordic precedent is a reliable guide, a natural concern is that the balance may have given too much weight to short-term relief at the expense of the financial sector's longer-term efficiency and viability. Evidence indicates that the enforcement of adjustment helps to lay the foundation for durable confidence in the financial system and for a self-sustaining economic recovery (see Section I). It may also help to prevent the recurrence of similar crises, by effectively reinforcing market discipline. The Japanese experience is quite telling in this respect. It has been widely acknowledged that the tougher standards applied by the supervisory authorities starting in 2002 represented a turning point in the management of the crisis, greatly benefiting the country's economy (Hoshi and Ito (2004)).

³⁷ The following quotation is representative of this widespread view: "Falling asset prices, deleveraging by some financial institutions and reduced risk appetite are creating illiquidity in credit markets and hampering price discovery. Prices in some credit markets have become detached from credit fundamentals due to unusually high discounts for illiquidity and uncertainty – the mirror image of the underpricing of risk during the upswing. As a result, mark-to-market losses on credit securities probably overstate the potential for future credit losses and the likely costs to the economy of the financial market disruption. This is lowering confidence and delaying the recovery of risk-taking." Bank of England (2008, p 15).

Conclusion

This paper has compared the policy responses to the current crisis and the Nordic crises, based on three principles for successful crisis management and resolution: early recognition and intervention (P1); broad and in-depth intervention (P2); and the need to strike a balance between limiting systemic costs and containing moral hazard (P3). We have argued that while the current policy response compares favourably in terms of Principle 1, it falls short in terms of Principle 2 and has struck a balance that has been less attentive to containing moral hazard than the Nordic precedent (Principle 3). The main inference is that the current response has favoured the need to sustain aggregate demand in the short term over that of encouraging financial sector adjustment through asset writedowns, the management of bad assets and reduction of excess capacity. By the same token, it has proved harder to maintain a level playing field between those institutions receiving (explicit *and* implicit) support and the rest.

A number of factors specific to the current crisis have favoured this outcome. The globalisation of banking and finance has complicated resolution and heightened incentives to be lenient, especially with respect to institutions with operations in several countries or open to international competition. The complexity of the financial instruments at the heart of the crisis and their wide dissemination across the system have made it harder to address bad assets effectively. And, in some jurisdictions, deep-seated aversion to even temporary government control or ownership has restricted the range of policy options.

Beyond these factors, however, we have argued that the uneven performance against the crisis resolution principles is not accidental. Intervening very early (P1) made it more difficult to implement in-depth interventions that would encourage underlying adjustments in balance sheets, operational efficiencies and competitive equality (P2) and that could contain moral hazard (P3). The fact that institutions were further away from objective insolvency narrowed the authorities' room for manoeuvre. And the outside role played by the liquidity crisis in the unfolding events helped to obscure the prospective solvency problems associated with the down leg of the credit cycle. Accounting conventions play a key role in this story. Fair value accounting explains why problems surfaced so early in the financial cycle and contributed to the unprecedented liquidity squeeze. And the coexistence of portfolios carried at fair value with typically (larger) loan books recorded on an amortised cost basis helps to explain why many institutions were wounded but still far from technical insolvency.

If this analysis is correct, three implications follow. First, looking forward, there is a risk that the policies followed so far have given too much weight to short-term considerations and too little to their long-term consequences. Establishing the basis for a durably profitable, less risk-prone financial sector may be harder and take longer than expected. By the same token, a self-sustaining recovery may be delayed. Second, it would be desirable for the authorities to intensify efforts to encourage adjustment in the financial sector, rebalancing their priorities. Finally, the interpretation of Principle 1 may need to be nuanced. Unless intervention techniques are adjusted accordingly, there may be such a thing as "intervening too early".

References

- Amel-Zadeh, A and G Meeks (2009): "Bank failure, mark-to-market and the financial crisis", *Judge Business School Working Paper*.
- Baba, N, R McCauley and S Ramaswamy (2009): "Dollar money market funds and non-US banks", *BIS Quarterly Review*, March.
- Baba, N and F Packer (2009a): "Interpreting deviations from covered interest parity during the financial market turmoil of 2007–08", *Journal of Banking and Finance*.
- (2009b): "From turmoil to crisis: dislocation in the FX swap market before and after the failure of Lehman Brothers", *Journal of International Money and Finance*.
- Bank of England (2008): *Financial Stability Report*, Issue 23, April.
- Basel Committee on Banking Supervision (2009): *Report and recommendations of the Cross-border Bank Resolution Group – consultative document*, September.
- Bäckström, U (1997): *What lessons can be learned from recent financial crises? The Swedish experience*, paper presented at the Federal Reserve Bank of Kansas City's symposium at Jackson Hole.
- Beck, T, D Coyle, M Dewatripont, X Freixas and P Seabright (2010): *Bailing out the banks: reconciling stability and competition*, Centre for Economic Policy Research.
- Benink, H and D Llewellyn (1994): "Fragile banking in Norway, Sweden and Finland: an empirical analysis", *Journal of International Financial Markets, Institutions and Money*, vol 4 (3–4), pp 5–19.
- Berg, S (1998): "Bank failures in Scandinavia", Chapter 11 in Caprio et al (1998), *Preventing bank crises – lessons from recent global bank failures*, World Bank, Washington DC.
- Bank for International Settlements (1993): *63rd BIS Annual Report*, Basel.
- (2008): *78th BIS Annual Report*, Basel.
- (2009): *79th BIS Annual Report*, Basel.
- Borio, C (2008): "The financial turmoil of 2007–?: a preliminary assessment and some policy considerations", in *Revista de Estabilidad Financiera*, Bank of Spain. Also available as *BIS Working Papers*, no 251, March.
- (2009): "Ten propositions about liquidity crises", *BIS Working Papers*, no 293, November. Also available in *CESifo Economic Studies*.
- Borio, C and M Drehmann (2009): "Assessing the risk of banking crises – revisited", *BIS Quarterly Review*, March.
- Borio, C and P Lowe (2002): "Asset prices, financial and monetary stability: exploring the nexus", *BIS Working Papers*, no 114, July.
- Borio, C and W Nelson (2008): "Monetary operations and the financial turmoil", *BIS Quarterly Review*, March.
- Brewer, E (1995): "The impact of the current deposit insurance system on S&L shareholders' risk/return tradeoffs", *Journal of Financial Services Research*, vol 9, pp 65–89.
- Brunnermeier, M (2008): "Deciphering the liquidity and credit crunch 2007–08", *Journal of Economic Perspectives*, vol 23 (1), pp 77–100.
- Calomiris, C, D Klingebiel, and L Laeven (2005): "Financial crisis policies and resolution mechanisms: a taxonomy from cross-country experience", Chapter 2 in P Honohan and L Laeven (eds), *Systemic financial crises – containment and resolution*.

- Cecchetti, S, M Kohler and C Upper (2009): *Financial crises and economic activity*, paper presented at the Federal Reserve Bank of Kansas City's symposium at Jackson Hole.
- Claessens, S, D Klingebiel and L Laeven (2005): "Crisis resolution, policies and institutions: empirical evidence", Chapter 6 in P Honohan and L Laeven (eds), *Systemic financial crises – containment and resolution*.
- Committee on the Global Financial System (2008): "Central bank operations in response to the financial turmoil", *CGFS Reports*, no 31, July.
- Dermine, J and D Schoenmaker (2010): "In banking, is small beautiful?", *Financial Markets, Institutions & Instruments*, vol 19 (1), pp 1–19.
- Deutsche Bundesbank (2009): *Financial Stability Review 2009*, Box 1.5.
- Diamond, D and R Rajan (2009): "Fear of fire sales and the credit squeeze", *NBER Working Papers*, no 14925.
- Drees, B and C Pazarbaşıoğlu (1998): "The Nordic banking crisis: pitfalls in financial liberalization", *IMF Occasional Papers*, no 161.
- Duffie, D (2008): "Innovations in credit risk transfer: implications for financial stability", *BIS Working Papers*, no 255.
- Dziobek, C and C Pazarbaşıoğlu (1997): "Lessons from systemic bank restructuring: a survey of 24 countries", *IMF Working Papers*, no 97/161.
- Englund, P (1999): "The Swedish banking crisis: roots and consequences", *Oxford Review of Economic Policy*, vol 15 (3), pp 80–97.
- European Commission (2008): "State aid: Commission gives guidance to Member States on measures for banks in crisis", IP/08/1495, Brussels, 13 October.
- (2009): "Communication from the Commission – the recapitalisation of financial institutions in the current financial crisis: limitation of aid to the minimum necessary and safeguards against undue distortions of competition", *Official Journal of the European Union*, C 10/2.
- (2010): "State aid: overview of national measures adopted as a response to the financial/economic crisis", Memo/10/52, Brussels, 26 February.
- Fender, I, N Tarashev and H Zhu (2008): "Credit fundamentals, ratings and value-at-risk: CDOs versus corporate exposures", *BIS Quarterly Review*, March.
- Frydl, E and M Quintyn (2006): "The benefits and costs of intervening in banking crises", Chapter 2 in D Hoelscher (ed), *Bank restructuring and resolution*.
- Gerdrup, K (2004): "Three episodes of financial fragility in Norway since the 1890s", *BIS Working Papers*, no 142.
- Goodhart, C and D Schoenmaker (2009): "Fiscal burden sharing in cross-border banking crises", *International Journal of Central Banking*, vol 5 (1), pp 141–65.
- Gorton, G (2009): "The subprime panic", *European Financial Management*, vol 15 (1), pp 10–46.
- Hansen, J (2003): "Financial cycles and bankruptcies in the Nordic countries", *Sveriges Riksbank Working Paper Series*, no 149.
- Honkapohja, S (2009): "The 1990's financial crises in Nordic countries", *Bank of Finland Research Discussion Papers*, 5/2009
- Honohan, P and L Laeven (eds) (2005): *Systemic financial crises: containment and resolution*, Cambridge University Press.

- Hoelscher, D (ed) (2006): *Bank restructuring and resolution*, Great Britain: Palgrave Macmillan Press.
- Hoelscher, D and S Ingves (2006): “The resolution of systemic banking system crises”, Chapter 1 in D Hoelscher (ed), *Bank restructuring and resolution*.
- Hoggarth, G (2003): “Resolution of banking crises: a review”, *Bank of England Financial Stability Review*, December.
- Hoshi, T and T Ito (2004): “Financial regulation in Japan: a sixth year review of the Financial Services Agency”, *Journal of Financial Stability*, vol 1 (2), pp 229–43.
- Huizinga, H and L Laeven (2009): “Accounting discretion of banks during a financial crisis”, *CEPR Discussion Papers*, no 7381.
- Ingves, S and G Lind (1996): “The management of the bank crisis – in retrospect”, *Sveriges Riksbank Quarterly Review*, no 1.
- (1997); “Loan loss recoveries and debt resolution agencies: the Swedish experiences”, Chapter 19 in C Enoch and J Green, *Banking soundness and monetary policy: issues and experiences in the global economy*, International Monetary Fund.
- International Monetary Fund (2009): *Global Financial Stability Report*, October.
- Jonung, L, L Schuknecht and M Tujula (2006): “The boom-bust cycle in Finland and Sweden 1984–1995 in an international perspective”, *CFS Working Papers*, 2006/13.
- Kane, E and D Klingebiel, (2004): “Alternatives to blanket guarantees for containing a systemic crisis”, *Journal of Financial Stability*, vol 1, pp 31–63.
- Kindleberger, C (1996): *Manias, panics, and crashes – a history of financial crises*, third edition, New York: John Wiley & Sons, Inc.
- King, M (2009): “Time to buy or just buying time? The market reaction to bank rescue packages”, *BIS Working Papers*, no 288.
- Laeven, L and F Valencia (2008): “Systemic banking crises: a new database”, *IMF Working Papers*, WP/08/224.
- Laux, C and C Leuz (2010): “Did fair-value accounting contribute to the financial crisis?”, *Journal of Economic Perspectives*, vol 24 (1), pp 93–118.
- McGuire, P and G von Peter (2009): “The US dollar shortage in global banking and the international policy response”, *BIS Working Papers*, no 291.
- Minsky, H (1982): “Can ‘it’ happen again?”, *Essays on Instability and Finance*, Armonk: M E Sharpe.
- Moe, T, J Solheim and B Vale (eds) (2004): “The Norwegian banking crisis”, *Norges Bank Skriftserie*, no 33.
- Nakaso, H (2001): “The financial crisis in Japan during the 1990s: how the Bank of Japan responded and the lessons learnt”, *BIS Papers*, no 6.
- Niinimäki, J (2009): “Hidden loan losses, moral hazard and financial crises,” *Journal of Financial Stability*.
- Panetta, F, T Faeh, G Grande, C Ho, M King, A Levy, F Signoretti, M Taboga and A Zaghini (2009): “An assessment of financial sector rescue programmes”, *BIS Papers*, no 48.
- Peek, J, and E Rosengren (2005): “Crisis resolution and credit allocation: the case of Japan”, Chapter 9 in P Honohan and L Laeven (eds), *Systemic financial crises – containment and resolution*.
- Petrovic, A and R Tutsch (2009): “National rescue measures in response to the current financial crisis”, *ECB Legal Working Papers*, no 8.

Reinhart, C and K Rogoff (2009): "Banking crises: an equal opportunity menace", *CEPR Discussion Papers*, no 7131.

Sandal, K (2004): "The Nordic banking crises in the early 1990s – resolution methods and fiscal costs", Chapter 3 in Moe, Solheim and Vale (eds), "The Norwegian banking crisis", *Norges Bank Occasional Papers*, no 33.

Steigum, E (2004); "Financial deregulation with a fixed exchange rate: lessons from Norway's boom-bust cycle and banking crisis", Chapter 2 in Moe, Solheim and Vale (eds), "The Norwegian banking crisis", *Norges Bank Occasional Papers*, no 33.

Vihriälä, V (1997): "Banks and the Finnish credit cycle 1986–1995", *Bank of Finland Studies*, E:7.

Annex 1: A brief description of the Nordic crises

The three Nordic banking crises appear similar in their causes, timescale and the way that the authorities handled them. Nevertheless, they were three separate episodes, caused and triggered by domestic factors. In the early 1990s, little cross-border banking took place between the Nordic countries. Hence, cross-border contagion was not an issue, and the crises were handled by each national authority without much need for inter-Nordic coordination. None of the Nordic countries was an EU member at that time.

In the mid-1980s, the three Nordic countries ended their quantitative regulation of bank lending. These controls had not been prudential in aim but rather had formed an integral part of macro demand management. After deregulation, the resulting surge of pent-up credit demand led to credit booms in all three countries (see Graph 1 in the main text). Neither bankers nor supervisors at that time had much experience with the workings of competitive credit markets.³⁸ Therefore, much of the increased lending turned out ex post to have been very risky. Once the correction after the boom started, the fall in demand was amplified by the procyclical monetary policy regime in all three countries, as a result of exchange rates being fully convertible and effectively pegged to the Deutsche mark via their peg to the ECU.

Between the autumn of 1988 and late 1990, a handful of local and regional banks failed in Norway. However, the crisis was not deemed systemic until December 1990, when one of the largest banks encountered problems. In both Finland and Sweden, the crises immediately hit large banks and were considered systemic by September 1991 and October 1991, respectively. The crisis in Norway peaked during 1991, whereas the crises in Finland and Sweden peaked in the course of 1992. By the end of 1993, the crisis in Norway was over in the sense that, by the following year (1994), loan loss provisions as a share of total assets for the aggregate banking system fell to well below 1% (Sandal (2004)). By the same yardstick, the crises in Finland and Sweden were over by the end of 1994 and 1995, respectively.

The three crises can be considered twin crises, in the sense that they all, to some extent, coincided with currency crises. During the autumn of 1992, there was a lot of speculative activity reflecting expectations that all three currencies would be devalued or depreciate. The monthly average of Sweden's real key policy rate rose to more than 60% in October, and Finland's and Norway's to more than 15%. High interest rates deepened the recession and aggravated the weak condition of the banks. However, interest rates were raised sharply to defend the respective currencies; they did not result from the banking crises as such. After the three countries successively let their currencies float (Finland in September 1992, Sweden in November 1992 and Norway in December 1992), they were able to lower interest rates rapidly and to significant degrees.

Finland experienced the most severe crisis. Loan losses relative to GDP reached 4.4% in Finland during the peak year of the crisis, 3.8% in Sweden and 2.8% in Norway. In Finland four years passed between the peak of the crisis and the banking sector's return to profitability, whereas in Norway and Sweden it only took two years (Sandal (2004)). Finland also experienced by far the most severe recession in the early 1990s. Its GDP fell by more than 6% in real terms in 1992 alone. To a large extent, this was due to the collapse of the Soviet Union, which had been a major importer of Finnish goods.

³⁸ Indeed, the rapid increase in bank lending was initially treated by regulators as a natural adjustment to a new regime (Berg (1998)).

Annex 2: Timelines and conditionality of support in the Nordic crises

Norway (1988–93)

First bank failure – rescue by the banks' own guarantee funds

In September 1988, *Sunnmørsbanken* – a medium-sized regional commercial bank – became the first Norwegian bank to fail since World War II. The Commercial Bank Guarantee Fund (CBGF) rescued all of the bank's depositors and creditors and injected new capital. Shareholders retained only a symbolic value for their shares. The board of directors and the management were replaced. In January 1990, it was decided that the bank should merge with *Christiania Bank og Kreditkasse* (CBK), at that time the largest Norwegian commercial bank.

Small savings banks fail – rescue by the banks' own guarantee funds

Between December 1988 and July 1992, a handful of small savings banks failed after suffering severe losses. All creditors were bailed out by the Savings Bank Guarantee Fund (SBGF). The banks were acquired by larger solvent savings banks. The SBGF either recapitalised the failed banks and/or provided guarantees to the acquiring banks. All but one of the failed savings banks were mutually owned, and hence they had no external owners. In the one case with external owners, the shares were written down as the SBGF injected capital.

Both the CBGF and the SBGF were capitalised through annual fees from member banks. Membership in the funds was compulsory for all banks. Both funds had a wide mandate to support member banks, ie much wider than just paying out depositors at failed banks.

Sparebanken Nord-Norge – first case of government money in rescue operations

In November 1988, the two regional banks that were to become *Sparebanken Nord-Norge* had essentially lost all their capital. The SBGF provided new capital and the Central Bank of Norway – after consulting with the Ministry of Finance – granted a liquidity loan that provided a subsidy of NOK 200 million. Conditions were set regarding the banks' operations and a merger between the two banks.

In September 1989 the bank suffered further losses, and in October more capital was injected by the SBGF. In addition, the central bank – following consultations with the Ministry of Finance – wrote down its unsecured liquidity loan to the bank by NOK 500 million. The majority of the board of directors of the bank was replaced.

Norion Bank – the only bank closed and liquidated

In October 1989, *Kredittilsynet* – the financial supervisors – informed the CBGF that a small newly established commercial bank in Oslo had lost its equity. The same month, the bank was closed and gradually liquidated, but the CBGF guaranteed all depositors. Other creditors – among them the central bank – lost money.

Systemic crisis – problems at the large commercial banks

In December 1990, the CBGF issued a guarantee to the third largest commercial bank, *Fokus Bank*. At the same time, CBGF declared its willingness to provide preference capital to member banks. This action effectively emptied the CBGF.

Government takes charge of rescue operations

Following the depletion of CBGF, the government announced in December 1990 that it would establish a guarantee fund for banks. A proposal was presented to parliament in January, and, in March 1991, after the law was passed, the Government Bank Insurance Fund (GBIF) was established. The Fund was set up to provide support loans to the banks' own guarantee funds (the CBGF and SBGF) in order to allow them to provide capital to distressed member banks.

The law specified that these support loans were subject to certain conditions, namely: (i) the writedown of existing share capital; (ii) restrictions on dividends; (iii) cost-cutting requirements; and (iv) changes in the board of directors and management.

Christiania Bank og Kreditkasse (CBK) and Fokus Bank

In August 1991, GBIF provided support loans to CBGF so that the latter could inject preference capital into *CBK* and *Fokus*, the second and third largest commercial banks. These banks had suffered severe losses and were now greatly undercapitalised. Both these rescue operations involved a de facto partial nationalisation of the banks.

The conditions set for these loans provided that the banks would: (i) write down their existing share capital; (ii) follow a plan with targeted cost reductions; (iii) reduce their risk-weighted assets; (iv) replace the board of directors and management, if they had not already done so; and (v) report to the GBIF on the banks' results and compliance with the plan.

In October 1991, the third quarter results of *CBK* – the second largest bank – showed that the bank had lost all its capital, and had a negative net worth. Likewise, *Fokus Bank* – the third largest commercial bank – had lost all its share capital and some of its preference capital.

A few days later, the government announced new measures to deal with the crisis: (i) additional capital for the GBIF; (ii) the GBIF would now be permitted to invest capital (preference capital and common shares) directly into troubled banks without going through the banking sector's own guarantee funds (the CBGF and SBGF); (iii) a large part of the central bank's liquidity loans to the banks would be replaced with deposits at a low, subsidised interest rate – these loans would be distributed among banks based on the size of their risk-weighted assets; (iv) the establishment of a government bank investment fund to inject capital into banks other than the failed ones (general government capital support); and (v) NOK 1 billion was granted to the SBGF.

In November 1991, parliament approved an amendment to the Commercial Bank Act. The amendment stated that if the shareholders' general meeting refused to write down share values in line with a bank's losses, the King in Council (the government) would be authorised to write down the shares.

In December 1991, the GBIF injected new equity capital into *CBK* and *Fokus* on condition that the existing share capital be written down to nil. The other conditions from August remained in place. As the shareholders' general meetings of the two banks refused to write down the shares as instructed, the King in Council immediately decided to write them down to nil. Thus, the two banks were fully nationalised.

By November 1992, the two banks had suffered further losses that would have prevented them from meeting the Basel I requirements at year-end. As a result, more capital was injected on conditions similar to those of August 1991. In the case of *CBK*, however, no particular requirements for further reductions in risk-weighted assets were imposed. It was specified that the banks should reduce their branch networks. In the case of *Fokus*, this was to be achieved by selling off to other banks a large part of its loan portfolio in certain geographical areas. Emphasis was also put on contributing to a more efficient payment system.

Den norske Bank (DnB)

In December 1991, the GBIF injected preference capital into *DnB* – the largest bank in Norway – as the bank’s economic situation indicated it would be severely undercapitalised by year-end. This implied a partial nationalisation of the bank. Conditions were similar to those applied to *CBK* and *Fokus*, except that the original share capital was written down to only 10% of its original value, and there was no specific requirement for a reduction of risk-weighted assets. As an additional condition, the bank was required to take over a failed bond-issuing mortgage company (*Realkredit*).

In November 1992, after the bank had suffered further losses that would prevent it from meeting the Basel I requirements by year-end, the GBIF decided to inject more capital on conditions similar to those of 1991 and with the provision that the original shares be written down to nil. This was approved by the shareholders’ general meeting in March 1993.

Two regional savings banks – Sparebanken Rogaland and Sparebanken Midt-Norge

In September 1991 it became evident that both *Sparebanken Rogaland* and *Sparebanken Midt-Norge* had lost all their equity and had a negative net worth. In October 1991, the GBIF provided two support loans to the SBGF so that the guarantee fund could inject capital into the two banks. This resulted in their partial nationalisation.

The conditions set for this support included significant reductions in operating costs and total assets for both banks. It was also required that *Sparebanken Rogaland* limit its activities to its own geographical region. Both banks had to report to the GBIF on their results and their compliance with the specified conditions.

Asset management company (AMC)

In the Norwegian rescue operations, no AMC (or bad bank) was set up. The management and boards of all the banks involved preferred to retain bad loans and handle the workout internally, following recapitalisation.

Liquidity support

From late 1985, the Norwegian bank sector was a net borrower at the central bank. This position persisted through the crisis. Neither before nor during the crisis were the banks required to pledge any collateral for their borrowing at the central bank. However, some banks faced restrictions on their borrowing quotas due to low solvency or their overdraft position. These restrictions were lifted once the banks’ solvency problems were overcome, generally through mergers with a larger bank. In 1991, 11 banks received special emergency loan assistance (ELA) from the central bank. These facilities amounted to NOK 26.7 billion (EUR 3 billion). In 1992, six banks received ELA. Some of the ELA was extended in the form of foreign currency loans in 1991–92, with the aim of alleviating potential problems at banks that had to roll over foreign currency funding. These foreign currency loans were all repaid by the end of 1992. Banks were not required to pledge collateral for ELA.

Out of the crisis

After returning to profitability during 1993, all the three large banks that had been more or less nationalised during the crisis were able to raise equity in the market, allowing the state to sell large parts of its holdings in these banks in the course of 1994. The government did, however, retain a 33% share in *CBK* until the bank was sold to *Merita-Nordbanken* in 2000 to become a part of *Nordea*. The government still holds 33% of *DnB NOR*, the largest bank in Norway – into which *DnB* was merged in 2003. During the crisis, the gross fiscal costs of crisis management amounted to 2.6% of GDP in 1991, the peak year of the crisis

Finland (1991–93)³⁹

Skopbank, Bank of Finland rescue

Skopbank was a commercial bank controlled and mostly owned by Finnish savings banks. It acted as a central bank for the Finnish savings banks. In the late summer of 1991, it became evident that *Skopbank* would not recover from its aggressive lending practices during the boom years. In September 1991, the Bank of Finland seized control of the bank by acquiring 53% of the shares outstanding (private shareholders retained the rest). The private shareholders were mostly Finnish savings banks, many of which the Finnish authorities feared would be endangered if they had to write down their shares in *Skopbank* in line with that bank's losses.

Targets were set for balance sheet and cost reductions. Most of the board was replaced.

General government capital support measures, March 1992 to December 1992

Capital support was available to all banks, and virtually all banks applied for it under the programme. The government bought preferred capital certificates in all participating banks. These certificates were convertible to voting stocks if (i) interest remained unpaid for three years in succession or (ii) a bank's solvency ratio fell below the legally required minimum. The interest rate was set slightly above the market rate and would gradually increase, in order to provide banks with an incentive to repay the certificates.

Banks receiving these capital certificates were obliged to show a flexible attitude towards borrowers having trouble in servicing their debt. To the extent that their solvency permitted, banks were required to meet borrowers' needs for new loans. In addition, banks were not allowed to call in loans before maturity.

Skopbank under the Government Guarantee Fund

Established in April 1992, the Government Guarantee Fund (GGF) bought the Bank of Finland's share in *Skopbank* in June, paying the private shareholders a nominal fee for their stake. However, the company managing the troubled assets of *Skopbank*, *Sponda*, remained under the control of the central bank until May 1996, when *Sponda* was acquired by the state.

Savings banks and the Government Guarantee Fund

Also in June 1992, 41 ailing savings banks were required to merge together – into the *Savings Bank of Finland (SBF)* – as a condition for the GGF's capital support. Further conditions included: (i) reductions in costs and in the branch network of *SBF*; (ii) owners of the merging savings banks were to lose almost all their capital, ie the GGF became the sole owner; (iii) compensation of directors was trimmed and readjusted to create incentives for complying with the restructuring programme; (iv) the merged bank was required to convert itself into a joint stock company and, subsequently, to be sold by the GGF; (v) *SBF* was required to put more emphasis on retail banking than on commercial and investment banking; (vi) further risk reduction through the lowering of credit denominated in foreign currency; less credit to high-risk sectors; and (vii) a more balanced and long-term funding structure.

In October 1993, the government decided to sell the sound parts of *SBF* in equal shares to four of its competitors. Non-performing assets were transferred to the bad bank (*Arsenal*) at the government's risk, ie the government would own the share capital and guarantee *Arsenal's* debt liabilities.

³⁹ The main sources for this information are Nyberg and Vihriälä (1994) and Sandal (2004).

Blanket guarantee

In August 1992, the government announced that the stability of the Finnish banking system would be safeguarded under all circumstances. In January 1993, parliament reaffirmed this commitment, by pledging the state to guarantee that Finnish banks would be able to meet their obligations on time under all circumstances. This guarantee was maintained until December 1998.

STS-Bank and the Government Guarantee Fund

In September 1992, *STS-Bank* – a small commercial bank – asked the GGF for support. The GGF advocated a merger with a larger bank, *KOP*, after *STS*'s problem assets had been transferred to a separate asset management company. However, parliament failed to pass the legislation necessary to implement this plan. In the summer of 1993, though, *STS* established a subsidiary to which it transferred all the assets which, according to the original plan, would have been sold to *KOP*. This subsidiary was then sold to *KOP*. The name of *STS* was changed to *Siltapankki*. *KOP* now owned almost all the shares in *Siltapankki*, but control was exercised by the GGF. By then, *Siltapankki* had become a bad bank managing the non-performing assets of the former *STS*. In November 1995, *KOP* sold its shares in *Siltapankki*, at a price corresponding to EUR 1, to the state-owned bad bank *Arsenal*.

Liquidity support

It is difficult to define emergency liquidity assistance (ELA) to banks because of the way monetary policy operations were conducted by the Bank of Finland in the first half of the 1990s. However, two clear cases of ELA can be identified. In October 1991, FIM 13.4 billion (EUR 2.2 billion) was extended as overnight credit to commercial banks, mostly to *Skopbank*. The credit was repaid in a matter of weeks. Further, by the end of 1992, Bank of Finland had FIM 9.5 billion outstanding in the form of “stabilisation loans” to the asset management company *Sponda*.

Out of the crisis

Aggregate loan losses came down to well below 1% of total assets in 1995. Nevertheless, the blanket guarantee was kept in place until December 1998, when parliament decided to eliminate it. Also in 1998, the remainder of one of the AMCs, *Sponda*, was sold. The largest AMC, *Arsenal*, closed down in 2000, but the government received income from its liquidation as late as 2009. In the course of the crisis, the government spent a gross amount equivalent to 13.7% of GDP in 1992, the peak year of the crisis.

Sweden (1991–94)⁴⁰

First major bank in trouble, Första Sparbanken – October 1991

In October 1991, it became apparent that the largest savings bank in the country, *Första Sparbanken*, had suffered loan losses that would entirely wipe out the bank's equity capital. In the same month, the government decided to guarantee a loan (SEK 3.8 billion) to the bank's owners, a savings bank foundation. Approved by parliament in December 1991, the guarantee was issued on condition that: (i) the savings bank be reorganised into a joint stock company; (ii) the loan should be used to buy stocks in the bank; (iii) the government should approve a new board of directors; and (iv) no dividend could be paid out as long the guarantee was in place. A restructuring of the bank was also required. During the first half of

⁴⁰ The main sources of information for this section are Riksdagsproposition 1991/92:63, Riksdagsproposition 1992/93:135, Riksdagsproposition 1995/96:172 and Jennergren and Näslund (1998).

1992, it became evident that the situation at *Första Sparbanken* was even worse than earlier assessed. In June 1992, the guarantee was transformed into a subsidised loan and a guarantee was issued for a new loan of SEK 3.5 billion. Further, in the course of 1992, *Första Sparbanken* merged with 10 other regional savings banks to form a new bank organised as a joint stock company, *Sparbanken Sverige*. This bank has operated since 2006 under the name of *Swedbank*.

Nordbanken, the largest bank in trouble – October 1991

In early October 1991, it was estimated that *Nordbanken* would suffer loan losses that would prevent it from meeting minimum capital standards by year-end. The state held more than two thirds of *Nordbanken's* shares. In November–December, new shares worth SEK 5.1 billion were issued, of which the state bought SEK 4.2 billion and private investors the rest.

In April 1992, the bank informed the government that its economic situation had worsened considerably and that it would not be able to meet capital requirements unless several billion kronor of new capital were injected. At this point, the state owned more than three quarters of *Nordbanken's* shares. In May, the government proposed to parliament that the state should acquire all remaining shares in the bank and opt for a restructuring in which a major part of the bank's non-performing assets – as suggested by the bank's new management – would be transferred to a bad bank named *Securum*. Private shareholders would be bought out at the original November–December 1991 public offering price plus interest, ie a total of SEK 21 per share. The proposal was accepted by parliament and, in the third quarter of 1992, the government acquired all private shares in the bank. In late October 1992, the government injected SEK 10 billion as new capital. Due diligence performed on *Nordbanken* during the autumn of 1992 showed the bank's equity to be negative, if the government's capital injections were not taken into account.⁴¹

After the government had become the sole owner of *Norbanken*, *Securum* – the bad bank or asset management company for *Nordbanken* – was set up in late 1992. *Securum* was funded with SEK 24 billion of equity capital from the government and SEK 26 billion of loans from the bank. *Nordbanken's* board also initiated a plan to make large cuts in the bank's operating costs.

Gota Bank

In September 1992, it became apparent that *Gota Bank* had suffered loan losses that would prevent it from meeting its capital requirements; by year-end, the bank might become insolvent. In the same month, the government declared that it would guarantee all of the bank's liabilities other than equity. At the same time, the government issued a blanket guarantee for all creditors in Swedish banks (see below). The owner of *Gota Bank* – a holding company owned by an insurance company – was declared bankrupt. In reality, the bank was by then completely state-owned. In December, the government formally acquired all of the bank's shares. A due diligence study carried out during 1993 revealed that the bank's equity was negative, and hence its owners were not compensated. In the course of 1993, a separate bad bank – named *Retriva* – was set up for *Gota Bank*. By January 1994, the government injected SEK 20 billion to cover the bank's negative equity. Its bad assets were then transferred to *Retriva*, into which the government injected SEK 3.8 billion as equity and to which it guaranteed a loan for the same amount. Following an auction, where private investors (domestic and foreign) submitted offers for the bank, the Government Bank Support Board (GBSB, see below) decided in

⁴¹ This due diligence demonstrates that the government effectively bailed out the private shareholders who, during the third quarter of 1992, sold their shares to the government at the November–December 1991 public offering price. The government seems to have taken this course for fear of being accused of not giving sufficient information to investors who bought the shares in late 1991.

December 1993 – after having considered the potential gains from a merger – to let *Nordbanken* acquire *Gota Bank*. Eventually, *Retriva* was merged into *Securum*.

Blanket guarantee

In a press release of 24 September 1992, the Swedish Ministry of Finance announced that the government would ask parliament to guarantee all the liabilities (apart from equity) of all Swedish banks and a few specified mortgage institutions. This was reiterated in the government's proposition to parliament in November of the same year, which received parliamentary approval on 18 December 1992. The blanket guarantee remained in force until July 1996.

The Government Bank Support Board (GBSB)

In November 1992, the government announced that it would set up a separate body to handle government support to troubled banks. This move could be seen as a way of implementing the blanket guarantee. The GBSB was formally set up in May 1993. The Board took on the responsibility for the government's ownership of *Nordbanken* and *Gota Bank* as well as for the two AMCs, *Securum* and *Retriva*. In addition, the Board was to handle any other cases in which a bank would apply for government support. The Board was mandated to impose strict conditions in return for any support, including the requirement for banks to draw up restructuring plans. In early 1993, two other banks (*Skandinaviska Enskilda Banken* and *Sparbanken Sverige*) applied to the Board for support. However, both banks were subsequently able to raise capital in the market and thus withdrew their applications.

Föreningsbanken

Föreningsbanken was a commercial bank formed in 1992 as a result of mergers between regional cooperative banks. In early 1994, the bank received a capital adequacy guarantee from the GBSB. In the event that the bank's capital coverage fell below 9%, the GBSB committed itself to inject SEK 2.5 billion in return for non-voting preference shares. The guarantee also stated that if the bank did not buy back those shares within a certain period of time, they would be converted into voting shares, leaving the GBSB as the bank's majority owner. However, the guarantee was never activated and was terminated by the end of 1995.

Liquidity support

Once the blanket guarantee was in place, Sveriges Riksbank (the Swedish central bank) could extend emergency liquidity assistance (ELA) to the troubled banks without imposing collateral requirements. One of the large banks that was rescued by government capital injections received such ELA. Loans equivalent to ELA were also provided in a handful of other cases. To assist Swedish banks with funding in foreign currencies, the Riksbank deposited SEK 56 billion of its foreign reserves in Swedish banks.

Out of the crisis

In the course of 1996, banks' loan losses had fallen to well below 1% of total assets, and the blanket guarantee was removed. The *Securum* AMC was wound up in 1997. The government started to sell its shares in *Nordbanken* in 1995 but retains an ownership share (currently standing at 19.9%) in *Nordea*, the bank into which *Nordbanken* was merged in 1998. The gross fiscal costs of the support were equivalent to 4.4% of GDP in 1992, the peak crisis year.⁴²

⁴² This statistic and the corresponding ones for Finland and Norway exclude the costs of subsidised loans to the banks. Adding those costs would increase the numbers by approximately 0.05 to 0.2 percentage points.

Annex 3: Support packages in the Nordic crises

Gross support paid from consolidated government to banks

Local currencies, not discounted

Norway						
Norway (NOK bn)	Capital injection to specific problem banks	Funding for AMCs	Loans	General capital injections	Other transfers	SIMPLE SUM
1988 Sparebanken Nord-Norge	0,200 ⁴³					
1989 Sparebanken Nord-Norge						0,500 ⁴⁴
1991 Savings Bank Guarantee Fund			0,320 ⁴⁵			
1991 Commercial Bank Guarantee Fund			2,450 ⁴⁶			
1991 Fokus Bank	0,475					
1991 Christiania Bank	5,140					
1991 Savings Bank Guarantee Fund					1,000	
1991 Den norske Bank	4,889 ⁴⁷					
1992 Sparebanken NOR				1,000		
1992 Fokus Bank	0,600					
1992 Christiania Bank	1,050		0,850			
1992 Den norske Bank	1,500					
1992 Oslobanken			0,001	0,063		
1993 Fokus Bank	0,220					
1993 Oslobanken	0,088					
SIMPLE SUM	14,162	0	3,621	1,063	1,000	19,846
% GDP 1991	1,83	–	0,47	0,14	0,13	2,56
GDP 1991	775,727					

Sources: Wilse (2004); Moen (2004); Statistics Norway.

Guarantees are included only if they were called up. Interest rate subsidies from the Central Bank of Norway in 1991–92 are not included.

⁴³ Calculated interest rate subsidy on loan from the Central Bank of Norway as of 1988, approved as capital.

⁴⁴ Writedown of liquidity loan from the Central Bank of Norway.

⁴⁵ To partially fund the SBGF's injection of capital into *Sparebanken Rogaland* and *Sparebanken Midt-Norge*.

⁴⁶ To partially fund the CBGF's injection of capital into *Fokus Bank* and *Christiania Bank*.

⁴⁷ Includes shares bought by the SBIF.

Finland

Finland (FIM bn)	Capital injection to specific problem banks	Funding for AMCs	General capital injections	Other transfers	SIMPLE SUM
1991 Skopbank	4.330				
1992 Skopbank	2.772	9.752			
1992 Savings Bank of Finland	11.094		1.400		
1992 Other savings banks	0.160				
1992 Savings banks sec fund			0.500		
1992 Okobank				0.422	
1992 Coop banks				1.108	
1992 Postipankki				0.903	
1992 Union Bank of Finland				1.749	
1992 KOP				1.726	
1992 STS-Bank				0.170	
1992 General capital injections, other banks				1.822	
1993 Skopbank	1.550				
1993 STS-Bank	3.036				
1993 Savings Bank of Finland	2.100				
1993 AMC Arsenal		5.000			
1994 AMC Arsenal		6.000			
1995 AMC Arsenal		8.000			
1996 AMC Arsenal		4.000			
SIMPLE SUM	25.042	32.752	1.900	7.900	67.594
% GDP 1992	5.07	6.63	0.38	1.60	13.69
GDP 1992	493.739				

Sources: Nyberg and Vihriälä (1994); Drees and Pazarbaşıoğlu (1998); Statistics Finland.

Calculations for Finland do not include revenues from the sale of banks or assets during the period 1991–96.

Sweden						
Sweden (SEK bn)	Capital injection to specific problem banks	Funding for AMCs	Loans	General capital injections	Other transfers	SIMPLE SUM
1991 Nordbanken	4,191					
1992 Norbanken					2,055	
1992 Nordbanken	10					
1993 Securum		24				
1993 Gota Bank	20,231					
1993 Retriva		3,8				
1991–92 Sparbankstiftelsen			3,8			
SIMPLE SUM	34,422	27,8	3,8	0	2,055	68,077
% GDP	2,21	1,79	0,24	0	0,13	4,38
GDP 1992	1555,961					

Sources: Jennegren and Näslund (1998); Riksdagsproposition 1995/98:172; Statistics Sweden.

Securum and *Retriva* were the asset management companies (AMCs) or bad banks of *Nordbanken* and *Gota Bank*, respectively. They were 100%-owned by the state through its capital injections of SEK 24 billion and SEK 3.8 billion. In addition to this capital, *Securum* was funded by a loan from *Nordbanken*. The two banks' troubled assets were not transferred to the two AMCs until the banks were fully nationalised, ie the transaction involving the troubled assets took place between fully state-owned agencies; thus, no private investors had incentives to overstate the value of these assets.

Other support measures from the Swedish authorities included:

- An explicit blanket guarantee covering all liabilities of all Swedish banks, except their share capital and subordinated debt with indefinite maturity, that was announced by the government in September 1992. It was passed by the Swedish parliament in early December 1992.
- A specific guarantee of SEK 6.8 billion for a loan to *Sparbankstiftelsen*, the owner of *Första Sparbanken*.
- Lending to *Sparbankstiftelsen* that involved an interest rate subsidy valued at SEK 1.028 billion by 1994.
- A specific guarantee of SEK 10 billion for a loan to the AMC *Securum*.
- Use by the Riksbank of a large part of its foreign reserves as foreign currency deposits. At its peak, this amounted to SEK 57 billion.
- For a short period in the autumn of 1992, when the Riksbank set its key rate at 500%, it let banks borrow at a subsidised interest rate through the normal liquidity system. These subsidies are not included in the table above.

The two specific guarantees were never paid out.

Annex 4: The global financial crisis

	BE	CH	DE	FR	ES	IE	NL	UK	US	FI	NO	SE
Capital injections ¹	6.1	1.1	1.8	1.3	(8.3)	10.6	3.6	4.7	5.2	7.1	2.4	2.2
Debt guarantees ²	26.4		16.0	13.6	9.2	nLim	33.6	17.2	15.7	nLim		nLim
Asset purchases ¹	3.3	8.2	3.4		(2.8)	44.0			1.7	6.6 ³		1.8 ³
Asset insurance ¹	8.9		0.3	0.6	(8.3)		9.8	37.4	2.9			
<i>Total (simple sum)</i>	<i>44.7</i>	<i>9.4</i>	<i>21.6</i>	<i>15.5</i>	<i>20.3</i>	<i>>54.5</i>	<i>47.0</i>	<i>59.3</i>	<i>25.5</i>	<i>>13.7</i>	<i>2.6</i>	<i>>4.4</i>

Information as of November 2009. Shaded areas show where general bank rescue programmes were put in place. Further detail on individual packages is provided in Tables A2–A7 below. The table excludes interest rate subsidies. “nLim” = no limit specified; correspondingly, “>” denotes the presence of additional contingent fiscal liabilities, possibly of substantial size. BE = Belgium; CH = Switzerland; DE = Germany; ES = Spain; FI = Finland; FR = France; IE = Ireland; NL = Netherlands; NO = Norway; SE = Sweden; UK = United Kingdom; US = United States.

¹ Actual value spent (or insured) as a share of 2008 GDP (for the Nordic countries: FI = 1992; NO = 1991; SE = 1992); if the programme remained unused, the programme ceiling as a share of GDP is shown in parentheses. ² Programme ceiling as a share of GDP. ³ Value of public funding provided to asset management companies; this amount is not comparable to the size of asset purchases.

Sources: Central banks; government sources; press reports; authors' calculations.

Table A2: Extension of deposit insurance schemes

	Announced	Eligible institutions	Eligible deposits	Previous limit	in USDm	New limit	in USDm	Pricing
CH	05 Nov 008	Swiss banks, including subsidiaries of foreign banks	Retail	CHF 30,000	28,000	CHF 100,000	86,000	
DE	06 Oct 2008	Private banks (including subsidiaries of foreign banks), saving banks, cooperative banks, building associations and state banks	Retail	EUR 20,000	29,400	Unlimited	Unlimited	
FR	(no extension)	All financial institutions licensed by the Comité des Établissements de Crédit et des Entreprises d'Investissement (CECEI), including branches of non-European Economic Area institutions	Retail	EUR 70,000	103,000	EUR 70,000	103,000	
NL	10 Oct 2008	Dutch banks operating under a licence from the Netherlands Bank, including branches of foreign banks	Retail	EUR 40,000 ¹	59,000	EUR 100,000	147,000	
UK	03 Oct 2008	Financial institutions licensed by the FSA	Retail	GBP 31,700 ²	59,000	GBP 50,000	93,000	Funded by proportional levies on licensed institutions
US	03 Oct 2008	FDIC-insured banks and savings associations	All	USD 100,000	100,000	USD 250,000	250,000	After 05 Dec 2008, 10 bp surcharge on any qualifying deposit amounts exceeding the current deposit insurance limit of USD 250,000
	14 Oct 2008	FDIC-insured depository institutions, US bank holding companies, and US savings and loan holding companies that engage only in financial activities	TA ³	USD 250,000	250,000	Unlimited	Unlimited	

Information as of November 2009. ¹ Coinsurance: depositors bear 10% own risk between EUR 20,000 and EUR 40,000. ² 100% of funds up to GBP 2,000, 90% coverage of the next GBP 33,000. ³ Non-interest bearing transaction deposit accounts.

Sources: Central banks; government sources; press reports.

Table A3: Debt guarantee programmes

	First announced	Issue-by date	Coverage ends by	Eligible institution [#]	Eligible instruments [§]		Maximum amount	Fee
					currency	type		
AU	12 Oct 08	31 Mar 10	31 Mar 10	DB, FB	All major	D+	–	Varies with credit rating (3 tiers): 70, 100, 150 bp
CA	10 Oct 08	31 Dec 09	up to 3 yrs after issue	DB, FB	DC, FC	D	– ¹	110 bp + (if no required rating) 25 bp + (if foreign currency) 20 bp
FR	13 Oct 08	31 Dec 09	31 Dec 14	SFEF ²	DC, FC	D	EUR 265bn (USD 390bn)	Base cost + borrowing bank's risk level ³
DE	13 Oct 08	31 Dec 10	31 Dec 15	DB, FB, O	DC, FC	D, IB	EUR 400bn (USD 588bn)	% of borrowing amount + risk premium
IT	13 Oct 08	31 Dec 09	31 Dec 14	DB, FB	DC	L	– ¹	50 bp + (if > 1 yr) median 5-yr CDS spread Jan 07–Aug 08 + (if > 2 yrs) 50 bp
NL	14 Oct 08	30 Jun 10	30 Jun 15	DB, FB	DC, FC	D	EUR 200bn (USD 294bn)	70 bp (if > 1 yr, historical CDS spread + 30 bp)
ES	13 Oct 08	30 Jun 10	30 Jun 15	DB, FB	DC, FC	D	EUR 100bn (USD 147bn)	Historical CDS spreads
UK	08 Oct 08	28 Feb 10	09 Apr 14 ⁴	DB, FB	All major	D	GBP 250bn (USD 465bn)	50 bp + median 5-yr CDS spread Jul 07–Jul 08
US	14 Oct 08	31 Oct 09	31 Dec 12 ⁵	DB, FB	DC, FC	D, IB	USD 2,250bn ¹	Varies with maturity (3 tiers): 50, 75, 100 bp; 10 bp add-on for bank holding company; new surcharge ⁶
CH	The Swiss government has announced that, in case of need, banks' new issuance of medium-term debt will be guaranteed.							

Information as of November 2009. The table is based on Table A3, BIS Paper no 48. Conditions associated with recapitalisations are tabulated separately (Table A7 below). [#] DB = domestic banks/credit institutions; FB = subsidiaries/branches of foreign banks; O = others (eg insurance companies, pension funds, money market funds). [§] DC = domestic currency; FC = foreign currencies; L = bank liabilities (unspecified); IB = interbank liabilities; D = senior unsecured debt (including commercial paper, certificates of deposit, bonds and medium-term notes; typically excluding covered bonds and complex instruments). The symbol "+" is added where the guarantee covers new issuance *and* existing debt. The maturity covered is between three months and five years for most programmes.

¹ With known per-institution limit. ² Guarantee applies to issuance by SFEF (Société de Financement de l'Economie Française), which in turn lends funds to credit institutions against collateral. ³ Cost for banks borrowing from SFEF. ⁴ Up to one third of guaranteed debt can be rolled over until this date. All guaranteed debt can be rolled over until 13 April 2012. ⁵ Latest guarantee expiration date for debt issued after 1 April 2009 (the extended issuance period). For debt issued prior to 1 April 2009, the guarantee still expires no later than 30 June 2012. ⁶ For debt (of at least one year) issued between 1 April and 30 June 2009 and maturing by 30 June 2012: 10 bp for insured depository institutions, 20 bp for others. For debt issued between 30 June and 31 October 2009, or debt issued after 1 April 2009 with maturity beyond 30 June 2012: 25 bp for insured depository institutions, 50 bp for others.

Sources: Central banks; government sources; press reports.

Table A4: Recapitalisation programmes

	Announced	Eligible institutions [#]	Size		Instrument [§]	Dividend pricing
			Local	USD		
DE	13 Oct 08	DI, SFI	€80bn ¹	\$118bn	Various ²	The fund receives a market-compatible compensation (eg preferred dividends or interest yields), preferential to existing proprietors
FR	13 Oct 08	DI, SFB	€40bn ³	\$59bn ³	PREF, SUB, COM	8% for five years, floating thereafter. (For SUB, 400 bp over five-year French Treasuries.)
NL	09 Oct 08	DI, SFI	≥€20bn	≥\$29bn	PREF, other	8.5% minimum, increasing if dividends paid to common shares
UK	08 Oct 08	DB, SFB	≥£50bn	≥\$93bn	COM, PREF	COM: 8.5% discount to the closing price on 10 Oct 2008. PREF: 12% for five years, Libor + 700 bp thereafter
US (CPP)	13 Oct 08	DB	\$250bn	\$250bn	PREF, WARR	5% for five years, 9% thereafter
US (CAP)	10 Feb 09	DB	(\$75bn) ⁴	(\$75bn) ⁴	PREF ⁵ , WARR	9% paid quarterly ⁵
CH	No general programme announced.					

Information as of November 2009. Conditions associated with recapitalisations are tabulated separately (Table A7 below). [#] DB = domestic banks and credit institutions; SFB = subsidiaries of foreign banks; DI = domestic financial institutions (including banks and credit institutions, plus insurance companies and, in some cases, other financial institutions); SFI = subsidiaries of foreign financial institutions. [§] COM = common shares; PREF = preferred shares; SUB = subordinated debt; WARR = warrants.

¹ With a limit per institution of €10bn, respectively. ² Any means appropriate, including COM, PREF, hybrid capital, and silent participations. ³ The European Commission approved only €24 billion (\$35 billion). ⁴ This amount states the combined recapitalisations that the US supervisory assessment ("stress test") required of the largest 19 bank holding companies, with the Treasury making government capital available in case of need. As banks subsequently met capital needs from private markets, CAP closed on 9 November 2009 with no public funds having been invested. ⁵ Mandatorily convert to common stock after seven years at the conversion price of 90% of a stock price average (subject to customary anti-dilution adjustments). The Treasury's preference shares held in some banks have been converted to common equity to meet supervisory expectations regarding the composition of capital.

Sources: Central banks; government sources; press reports.

Table A5: Recapitalisations

	Total, \$m	Main recipients	Amount [§]	Amount, \$m
CH	5,600	<i>UBS AG</i>	CHF 6.0bn	5,600
DE	67,442	Commerzbank AG Aareal Bank AG Hypo Real Estate <i>Landesbanken</i>	EUR 18.2bn EUR 525m EUR 6.1bn EUR 21bn	26,800 772 9,000 30,870
FR	37,180	BNPP BCPE ¹ Société Générale Crédit Agricole Crédit Mutuel <i>Dexia</i>	EUR 7.6bn EUR 7.1bn EUR 3.4bn EUR 3.0bn EUR 1.2bn EUR 3.0bn	11,170 10,440 5,000 4,410 1,760 4,400
NL	31,679	ING Groep NV AEGON Group SNS REAAL NV <i>Fortis Bank Nederland Holding</i> <i>ABN Amro</i>	EUR 10bn EUR 3.0bn EUR 750m EUR 4.0bn ² EUR 3.8bn	14,700 4,410 1,103 5,880 5,586
UK	126,852	Royal Bank of Scotland Lloyds TSB HBOS	GBP 45.5bn GBP 11.2bn GBP 11.5bn	84,630 20,832 21,390
US	745,835	<i>Citigroup</i> <i>Bank of America</i> Wells Fargo JPMorgan Chase Morgan Stanley Goldman Sachs Other TARP recipients <i>AIG Group Inc.</i> <i>Fannie Mae and Freddie Mac.</i> <i>GMAC LLC</i>	USD 45bn USD 45bn USD 25bn USD 25bn USD 10bn USD 10bn USD 84.7bn USD 69.8bn ³ USD 415bn USD 16.3bn	45,000 45,000 25,000 25,000 10,000 10,000 84,700 69,835 415,000 16,300

Information as of November 2009. Recapitalisations of *italicised* banks were conducted partly or fully outside the general recapitalisation programme. [§] Amount in local currency. ¹ Banques Populaires and Caisses d'Épargne merged between the first and second recapitalisation tranches. ² The Dutch contribution was part of the larger joint recapitalisation (EUR 11.2 billion by Belgium, Luxembourg and the Netherlands) before Fortis was split up. ³ Excludes the USD 60 billion Revolving Credit Facility from the Federal Reserve.

Sources: Central banks; government sources; press reports; authors' calculations.

Table A6: Asset purchase and insurance programmes

	Country [§]	Date [#]	Beneficiary	Asset type	Amount	Bank loss share		Valuation/Fee
						First loss	After	
Asset purchase	DE: SoFFin <i>under which:</i>	27 Oct 08	Fin institutions WestLB	Wide range	€80bn ¹ (\$117bn) €85bn (\$124bn)	– €3bn	–	Value in last interim or annual report; fee 12-m Euribor + 50 bp + CDS spread
	JP: Stock purchase	03 Feb 09 ⁴	Banks	Stocks	≤¥1trn ⁵ (\$9.6bn)	–	–	Market price
	CH: SNB	16 Dec 08	UBS	Real estate-related	\$38.7bn	10% capital	0% ⁶	Min{book value, independent valuation}
	US: Maiden Lane ⁷	25 Nov 08	AIG	RMBS, CDOs	≤\$52.5bn	\$6bn	0%	Fair market value; 1-m Libor + 100 bp
	US: MBS purchase	07 Sep 08	GSEs	New MBS	\$197.6bn	–	–	
	US: PPIP	08 Jul 09	Banks	Real estate-related securities & loans	\$4.4bn ²	–	–	
Asset insurance	FR (with BE)	(14 Nov 08)	Dexia (FSA)	–	\$16.98bn	\$4.5bn	0%	92 bp on portfolio, 32 bp default premium
	DE: Swap facility <i>under which:</i>	23 Jul 09	Fin institutions	Structured assets ³	€400bn (\$588bn) ¹	–	–	In line with market
		07 Oct 09	WestLB	Structured assets	€6.4bn (\$9.4bn)			
	UK: APS <i>under which:</i>	26 Feb 09	Banks	Wide range	–	Varies	10%	Varies
		26 Nov 09	RBS		£282bn (\$524bn)	£60bn	10%	£0.7bn each year (3 years) + exit fee
		(07 Mar 09)	Lloyds		£260bn (\$483bn)	£25bn	10%	£2.5bn exit fee ⁸
	NL: backup facility	26 Jan 09	ING	RMBS	\$35.1bn	0	20%	8% below par value; portfolio fee 55 bp
	NL: capital relief	31 Jul 09	ABN Amro	Dutch mortgages	€34.5bn (\$50bn)	0	–	–
US	10 Jun 09	Citigroup	Real estate-related	\$301bn	\$29bn	10%	\$7bn in preferred shares	
US	16 Jan 09	Bank of America	Real estate-related	\$118bn	\$10bn	10%	Exit fee \$425m	

Information as of November 2009. The table is based on Table A4, BIS Paper no 48. Conditions associated with these programmes are tabulated separately (Table A7). Excludes asset purchases conducted in the context of programmes supporting specific credit markets. “–” = not specified. § **Bold print** indicates countries with generalised programmes. # Starting date if known (otherwise announcement date in brackets). ¹ SoFFin fund of €400 billion is shared with debt guarantee programme. ² As of end-2009, \$4.3 billion had been invested in legacy securities, and a single loan book was purchased for \$64 million on a pilot basis. PPIP is currently inactive. ³ And their derivatives and hedges held as of 31 December 2008. Mainly ABS, CDOs, CLOs, RMBS and CMBS. ⁴ Reintroduction of a previous programme. ⁵ ¥250 billion per bank limit. ⁶ Bank shares in 50% of profits after repayment of loan, interest and fee due to the SNB. ⁷ The entries in this row refer to Maiden Lane II and III combined (announced 25 Nov 08 and 12 Dec 08). AIG shares in a fraction of the residual cash flow if the acquired portfolio's proceeds exceed expenses and interest due to the Federal Reserve. ⁸ Lloyds formally left the scheme on 11 November 2009 and paid the exit fee for the earlier (implicit) insurance coverage received.

Sources: Central banks; government sources; press reports.

Table A7: Conditions associated with bank rescue packages

	Package [†]	When [#]	Conditions and restrictions
CH	RK	P	Conditions on compensation policy; on-site inspections as long as the Swiss Confederation has a stake of at least 3%.
	AP	P	Strengthening of the capital base; compliance with best practices for compensation schemes and policies.
DE	RK	P	Conditions regarding executive compensation, business strategy and lending to small firms; prohibition on dividend payments.
	DG	A	Financial institutions must be adequately capitalised (Tier 1 ratio of 7% or more).
	DG, AP	P	Conditions regarding business strategy, remuneration of employees and dividend payments.
FR	RK	P	Banks must provide adequate financing to the economy: domestic lending to households, corporates and local authorities to increase by 3–4% over 2007 volumes. Additional conditions on trade finance and compensation limits.
	DG	A	Financial institutions must fulfil regulatory capital requirements.
		P	Participating institutions are to support lending to private individuals, corporates and local authorities (credit growth of 3–4% over 2007 volume), and to exhibit good corporate governance in the general public interest.
NL	RK	P	Board appointments with veto right, and specific limits on executive compensation.
	AP	P	Target for additional credit to individuals and private companies (€25bn); prohibition of bonuses to board of directors.
	DG	A	Solvency and liquidity requirements to be met, with public recapitalisation if necessary.
		P	Requirements on corporate governance with respect to bonuses and resignation premiums.
UK	RK	P	Restrictions on dividend payments and executive compensation, and a commitment to sustain lending at 2007 levels to small businesses and the housing sector. Right for board appointments. Balance sheet growth limit (to average historical UK banking sector growth between 1987 and 2007).
	DG	A	Institutions must raise Tier 1 capital in the appropriate amount and form within the required time frame.
	AP	P	Compliance with bank-specific targets for lending to creditworthy borrowers in a commercial manner (currently totalling £53bn); compliance with disclosure and remuneration standards.
US	RK	P	Oversight on corporate governance; restrictions on executive compensation and dividend payments.
	AP	P	As for RK above; plus compliance with a template for managing guaranteed assets.
	DG	P	Programme participants will be subject to enhanced supervisory oversight to prevent rapid growth or excessive risk-taking.
	CON	P	Replacement of CEOs; prohibition on dividends on common and preferred shares; all lobbying to halt; portfolios to shrink 10% per year beginning in 2010.

Information as of November 2009. [†] AP = asset purchase or insurance; CON = GSEs placed into US conservatorship; DG = debt guarantee programme; RK = recapitalisations. [#] Time at which compliance is required: A = ex ante (to restrict participation); P = ex post (imposed in exchange for the support provided).

Sources: Central banks; government sources; press reports.