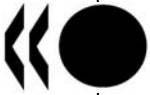


For Official Use

DAF/CMF(2008)19/ADD1



Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

03-Nov-2008

English - Or. English

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMMITTEE ON FINANCIAL MARKETS**

**DAF/CMF(2008)19/ADD1
For Official Use**

RESOLUTIONS OF WEAK INSTITUTIONS: LESSONS LEARNED FROM PREVIOUS CRISES

13-14 November 2008

For further information, please contact Mr. Stephen Lumpkin [Tel: +33 1 45 24 15 34; Email: stephen.lumpkin@oecd.org]

JT03254423

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

English - Or. English

RESOLUTIONS OF WEAK INSTITUTIONS: LESSONS LEARNED FROM PREVIOUS CRISES

I. Introduction

Episodes in which dislocations in the financial system have reached crisis proportions are not so uncommon. 1. Recent events serve as a stark reminder that concerns about safety and stability in the financial services industry are legitimate. Financial institutions and markets are susceptible to periodic problems of marked illiquidity and insolvency, as well as fraud, and other malpractices, which, if not addressed, can precipitate system-wide crises. This risk of instability exists both at the level of individual financial institutions and markets and in the aggregate, and when realised can result in large economic and social costs.¹

They have been widespread among OECD countries. 2. In the past few of decades, there have been numerous such episodes worldwide in which financial sector problems have reached crisis proportions. Caprio and Klingebiel (1996) report, for example, that between 1980 and 1995 three-quarters of IMF member countries experienced some form of financial crisis, many OECD countries among them. Analysis by the CMF has drawn similar conclusions, noting that severe banking sector problems were widespread among OECD countries during the 1980s and 1990s,² sparked in many cases by apparent price ‘bubbles’ in real estate or equity markets (Box 1), which had been supported in some cases or encouraged by favourable tax incentives and accommodative macroeconomic policies.³

All financial crises have their idiosyncratic elements, but they typically share many features in common. 3. The ongoing financial crisis is unique in some respects, including in particular, the role played by structured credit products and the most recent incarnation of the originate-and-distribute model, and the fact that the household sector has been more prominent in the origins of the crisis relative to the corporate sector, which has often been implicated in previous financial crises. But it also shares many elements in common with previous crisis episodes.⁴ To wit, most periods of financial instability have occurred after a change in the structural regime (e.g. deregulation, liberalisation,

¹ They can include losses on the part of small depositors and investors, reduced (or no) access to credit on the part of SMEs especially but borrowers generally, disruptions to payments and settlement systems, reductions in output, higher unemployment, and costs to taxpayers.

² “Experiences with the ‘Resolution of Weak Financial Institutions in the OECD Area’”, *Financial Market Trends*, No. 82, June 2002, pp. 107-149.

³ Virtually all OECD countries experienced major increases in household and business debt-to-income ratios in the wake of financial liberalisation that in some cases resulted in severe adverse outcomes. The CMF’s review of the regulatory reform process suggested that numerous mistakes occurred in many countries that were related, at least in part, to deregulation and liberalisation. Problems included: inadequate institutional strength, as measured by the quality of human capital and the adherence to market-based principles; insufficient attention directed at imbalances in the economy (i.e. debt, balance of payments, about markets and the output gap more generally) and how liberalisation of institutions and markets would interact given these imbalances; and inappropriate sequencing of financial sector reforms.

⁴ See, for example, E.P. Davis “Instability in the euro markets and the economic theory of financial crisis” Bank of England Discussion Paper No. 43, October 1989.

or financial innovation), which altered the nature of competition and had a number of unintended consequences. Most crisis episodes featured significant accumulation of debt and substantial accumulation of assets in an environment characterised by very low risk premia and high concentrations of risk, usually amidst declining capital ratios of lenders and borrowers.

Box 1

Examples of severe stress in the financial system

1982 LDC Debt Crisis

1987 Worldwide "equity market break"

1989 United States S&L Sector

Early 1990s:

- Systemic Bank Insolvency in Scandinavia
- Banking problems in many countries (e.g. US, UK)

Post-1990 banking crisis and insurance insolvency in Japan

ERM crisis 1992-1993

1994-95 Mexico

1997 Asian Crisis

1998 Russia/Brazil

Post 2000 "tech bubble" and "bear market" in equities

2007- Subprime mortgage crisis (origins in the US) and 2008 financial panic (international)

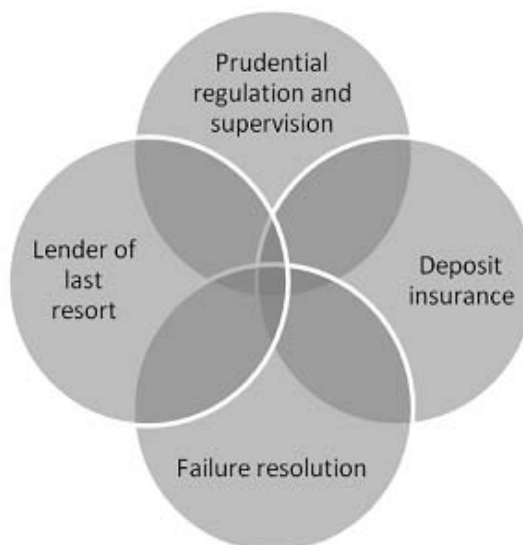
While some financial crises have been more or less contained, others have been true systemic problems.

4. In some past episodes of serious financial distress, problems were clearly of a systemic nature, characterised by widespread or large-scale failures of financial institutions or involving a large share of financial system assets.⁵ In other cases, problems were somewhat more contained, being limited to fewer, although in some instances nonetheless still systemically important, institutions. The current crisis started out as an isolated event, but it has not yet ended and the fallout has featured considerable international contagion.

5. The purpose of this report is to examine the current turmoil in the context of past crisis episodes. It focuses on the locus of activities subsumed under the failure resolution component of the financial safety net (Figure 1). Numerous problems have occurred in previous crisis episodes, related in some cases to weaknesses in practices of institutions and markets, but sometimes in the resolution of these problems, in the form of unanticipated feedback effects on various market segments, improper sequencing of actions and other programme inconsistencies. This report draws heavily on previous examinations of these issues, including by the CMF.

⁵ Past episodes have included among others the well-documented thrift crisis in the United States, banking failures in the Nordic countries, serious difficulties in France, Hong Kong, China, Italy, Japan, Spain, Mexico and Korea, as well as banking sector problems in Turkey and in the transition countries of Central and Eastern Europe (CEE).

Figure 1 Safety net interactions



Previous CMF analysis of crisis resolution efforts suggests a number of general principles of good resolution practices.

Among them is the need to provide correct incentives to market participants.

6. Previous resolution efforts suggest a number of general principles that should be observed. As one of the first steps in the process, authorities must obtain a complete and systematic evaluation of the size of the problem and its causes. All relevant parties must be involved and there must be sufficient political will to solve the problem. Once the causes and magnitude of the problem are identified, authorities must act promptly to resolve the difficulties. Cross-country experience suggests that it is prompt intervention that minimises the spread of concerns about the health of the system as a whole and reduces the costs of resolution activities in the longer run.

7. But authorities must balance the short-term exigencies to restore calm against the potential to foster increased moral hazard and unsustainable extensions of the financial safety net. Thus, in addition to promptness, efforts must be made to provide correct incentives and the measures used must be comprehensive and credible, capable of addressing the immediate financial problems of weak and insolvent financial institutions and corporations as well as any longer-term structural weaknesses.

8. In this context, financial support measures are often necessary, but these measures should not be such that they undermine incentives for private-sector equity injections. To the extent possible, market-based solutions are preferable. Toward that end, open bank assistance is perhaps best applied only in cases involving systemically important institutions.

Box 2**Terminology of crisis resolutions**

At the risk of great oversimplification, there are three broad approaches to handling individual problem institutions during a crisis: institutions can be *closed and liquidated*; they can be *consolidated*; or they can be *assisted* to forestall failure. They are linked to three basic classifications of institutions during times of crisis, based on their perceived viability. One group consists of healthy institutions deemed likely to survive without any assistance.

A second group consists of institutions whose viability is dependent on some form of assistance. If they are deemed to be viable on their own, they may be granted some form of *open bank assistance* through which their failure is forestalled or they may be subject to some form of consolidation (i.e., merger or acquisition).

The third group consists of those institutions whose franchise value has been lost and who are unlikely to survive even with substantial assistance. In general, institutions in this group are the obvious candidates for liquidation. For banking systems that are backed by explicit deposit insurance, liquidation would typically result in the liquidation of the assets with the depositors being reimbursed up to the deposit insurance limit; uninsured depositors or creditors would be covered only to the extent additional funds were remaining afterwards. For systems without deposit insurance, the government will be responsible for determining the payoff amount.

As used in this report, the term *restructuring* refers to the various measures used to address viable entities. Restructuring activities can take many forms.

The term *resolution* is used herein as a generic heading, but as applied to specific measures it refers to instruments and techniques for resolving institutions, by which is meant closing or liquidating them.

A dedicated framework for crisis resolution is desirable, but at a minimum there need to be procedures for effective co-operation across authorities.

9. In general, the historical evidence suggests that different exit strategies can result in considerably different costs for the deposit insurer, government, other authorities and the public at large. Hence, effective co-operation among entities responsible for the various components of the financial safety net is essential if restructuring and resolution efforts are to result in timely and effective resolution and restructuring activity, especially when large institutions are affected. These considerations suggest a need for a dedicated framework for facilitating the orderly winding-up of financial institutions during times of crisis, both for entities that take deposits and for other large integrated intermediaries that operate in scale across markets and borders.

10. Procedures involving ‘prompt corrective action’ exist for individual institutions,⁶ but generally cannot be invoked for systemic events, when the problems have become too large and too deeply embedded in the system. Usually, the types of actions that have been tried have been introduced on an *ad hoc* basis, often depending on the perceived degree of urgency and according to how far the situation had progressed.

In cases of widespread distress, there typically have been three related, but not necessarily consistent, objectives.

11. When problems of financial distress have been fairly widespread or have affected systemically important institutions, the official response has entailed several related, though sometimes conflicting, objectives:

- In the early stages, the measures introduced have generally been designed to prevent runs and restore public confidence in the system as a whole (“financial restructuring”);

⁶ For non-systemic cases, principles of good resolution practice suggest: that managers are punished, that shareholders are forced to accept their burden of loss as owners, and to the extent possible, that the financial community as a whole is involved in the efforts to resolve the problem.

- In the medium term, the focus shifts to re-capitalising institutions and addressing any associated nonperforming assets problem (“operational restructuring”);
- Longer-term measures are more strategic and have typically been addressed to improving the institutional framework, including as required the accounting, disclosure, legal and regulatory environment (“institutional restructuring”)

12. The paper proceeds as follows. The next section provides a brief review of the institutional setting in which systemic problems have arisen, touching on aspects of both causation and contagion. This section is followed by a brief review of the types of instruments available to policymakers. The final section then examines the techniques that have been employed to address the problems in particular crisis resolution efforts. As the occurrence of financial crises is not so uncommon, policymakers in various jurisdictions have faced them. These experiences give rise to a number of lessons, some common to many crises and others especially relevant to one or a few.

II. A review of common causes of financial instability

A. Market failure analysis – understanding what went wrong

Financial instability has typically been caused either by problems in the macroeconomic environment, problems on the policy front, or by problems at institutions.

The third category is more often the culprit and has contained a number of common forms.

13. Episodes of financial instability have generally derived from a number of sources. Problems have sometimes been sparked by sudden changes in policy or shocks in the macroeconomic environment. In some other cases, weaknesses in accounting and auditing systems and in regulatory and supervisory frameworks and practices have been implicated.⁷ The latter have included unclear or overlapping regulatory oversight, poor asset classification systems and loan-loss provisioning rules that fell short of international standards, close links between the government and owners/managers of financial institutions, often including programmes of directed lending or investment, and the lack of a clear “exit policy” for troubled financial institutions.

14. But in many instances of systemic instability, multiple factors have been involved and in most of them problems at financial institutions themselves have been at the core of difficulties, often related to

- weak management of core risks, including weak enforcement of contracts;
- perverse links between institutions and (usually) their corporate clients that resulted in poorly designed and weakly enforced lending limits;
- poor governance and internal management;

⁷ The CMF’s review of the regulatory reform process suggested that numerous mistakes occurred in many countries that were related, at least in part, to deregulation and liberalisation. Problems included: inadequate institutional strength, as measured by the quality of human capital and the adherence to market-based principles; insufficient attention directed at imbalances in the economy (i.e. debt, balance of payments, labour markets and the output gap more generally) and how liberalisation of institutions and markets would interact given these imbalances; and inappropriate sequencing of financial sector reforms.

- inadequate control of operational risks; and
- inadequate disclosure and lack of transparency⁸

A frequent cause of financial instability relates to booms and busts in financial markets deriving from the behaviour of market participants.

15. There tends periodically to be erosion in market discipline as participants shun caution in pursuit of short-term profit opportunities.⁹ Problems develop during boom periods and either manifest themselves during busts or precipitate them. Left to themselves, the processes that feed the build-up of risk and financial imbalances in various market segments become self-reinforcing. Booms in asset prices are shadowed by a rising likelihood that they will subsequently reverse, perhaps abruptly, while the concomitant build-up in leverage raises the odds that the reversal will be problematic for the system once it does arrive.

But the recurrence of these episodes also points a finger at supervision and enforcement.

16. These behaviour patterns tend to recur over time, and with increasing regularity or so it seems. And in that context it is a fair question to ask whether the recurrence of common aspects of financial sector crises points an accusatory finger at supervision and enforcement. For instance, signs of excess risk-taking, such as growing debt levels with a very high proportion of short-term debt, and sharp declines in risk premia are not difficult to spot, even if shielded by a veil of innovation. Widespread problems are a particular question mark, as they imply that deficiencies at many different institutions had been allowed to worsen under common external conditions.

B. Problems deriving from spillover effects

But while the boom-bust cycle is often at fault, some episodes of financial instability result from contagion.

17. Although ‘bad banking’ is often a cause of financial instability, some episodes of instability result from the spillover of problems elsewhere as opposed to direct causal factors. In many such cases, serious difficulties have been the result of fear, which can prompt risk averse investors to transfer funds to assets or institutions that are perceived to be safe. These ‘flights to quality’ have at times exerted strong downward pressure on the prices of the securities of institutions and countries directly affected by the initial external shock, but have spilled over as well to entities not directly involved.

Financial markets operate according to a complex system of rules and relationships that if broken can trigger disastrous consequences. A key component of this system is trust.

18. Financial crises have often occurred in the wake of such a widespread loss of confidence. Even professional market participants can suffer a loss of confidence in the financial integrity of their financial counterparties and markets at large, which if left unchecked, can become contagious, spreading from institution to institution, market to market, and even across borders.

19. Various interdependencies among market participants, financial markets and market infrastructures increase the potential for problems in one institutions or market segment to propagate. Some are direct (e.g. exposures through inter-bank loans, through counterparty credit exposures on derivatives and repos, through payment and

⁸ See Gerard Caprio, Jr. and Daniela Klingebiel, (1996), “Bank Insolvencies: Cross-Country Experience”, World Bank Policy Research Working Paper No. 1620 (Washington, DC: World Bank, July).

⁹ Hindsight suggests, in fact, that risk premia are at their lowest when risks are at their highest, in the late stages of the cycle. For banks, underwriting standards become the loosest for credits that are of the most dubious quality.

A loss of confidence, if left unchecked, can become contagious, spreading from institution to institution, market to market, and even across borders.

settlement relationships). Others are indirect, meaning there is a perception that institutions are similar in some respects to the troubled institution or institutions, even if there are no direct linkages. Examples include exposures on the same types of assets or to the same counterparties, loan concentrations to the same industry, or otherwise correlated portfolios.

20. In practice, the chain of events leading from isolated problems at individual institutions to more system-wide concerns has not always been triggered by insolvency. In fact, problems often start with a withdrawal of liquidity, linked to information problems and other negative externalities inherent in the nature and scale of the funding and trading interrelationships between major market participants, the greater number of participants, and the greater degree of anonymity in today's complex financial market. The shift toward internationalisation of some financial activities and an associated rise in large, in some cases globally active players in some market segments is an added complication.¹⁰

In times of general stress, uncertainty about exposures across counterparties can lead to demands on collateral, forcing some institutions to liquidate holdings.

21. With multiple inter-linkages and active portfolio management, a given institution may find it extremely difficult, at least intra-day, to calculate the total exposure it has with another institution across all market segments. The extent of the exposures its counterparties have with other participants may well be unknowable. In a liquidity crisis, this lack of knowledge about the full extent of exposures of and to particular institutions can generate considerable anxiety and may lead lenders and other counterparties to assume the worst.

22. This concern may induce traditional lenders to ask for increased collateral on loans (at a time when the asset value of that collateral is falling), or to withdraw credit lines entirely. Repo and derivatives counterparties also may become reluctant to trade with an institution widely perceived to be in trouble, even on a fully collateralised basis. Thus, firms facing funding problems, especially highly leveraged entities, can find themselves left with little recourse other than to resort to sales of assets.

23. This scenario has featured prominently in many previous crisis episodes. The common elements included the build-up of bubbles through indiscriminate lending and the subsequent spread of financial pressures as events evolved. Various asset classes have been involved in numerous jurisdictions across all OECD regions.

¹⁰ As a result of these various developments, the scale and complexity of funding and trading interrelationships have grown, both domestically and across borders. Major market participants now maintain a variety of such relationships over numerous markets in different financial instruments, currencies, and time zones. Many of their counterparties operate outside regulated segments of the financial system. Some have argued that the scale and complexity of some banking organisations may have reached the point already where even a significant disruption to their operations can be systemic, let alone their failure. See the statement by then Federal Reserve Governor Laurence Meyer after the passage of the Gramm-Leach-Bliley Act in 1999.

III. Some lessons drawn from previous financial crises or their resolution

Lesson: A proper identification of the nature of a crisis is necessary if the correct prescriptions are to be applied.

In order to select the correct instruments and techniques for addressing a crisis, it is necessary to obtain a thorough understanding of the causal factors and scope of the problem.

24. The focus of the discussion in the preceding section on understanding the parameters of financial system difficulties is important because it has a bearing on the appropriateness of alternative corrective measures. Relevant factors to consider include, among others, the underlying cause, the pervasiveness of the problems, and whether the problem involves small or large institutions. This is a core lesson. The failure to obtain a proper assessment has resulted in numerous mistakes with crisis resolutions.

25. Where the underlying cause is poor management practices in a few institutions, authorities have much greater scope for intervening in the management of the institutions. There are two key aspects to this scenario. First, the institutions themselves are at fault. One of the general maxims from failure resolutions is the need to avoid compromising incentives towards prudent behavior. *Ex ante*, preventing runs on solvent institutions is desirable; preventing runs on insolvent institutions is not. Absent the market discipline provided by creditors willing to withdraw their funds when they suspect an institution of operating in an unsound manner, institutions have an incentive to take excessive risks.

26. While these risks are borne in part by the banks, they are also partly borne by taxpayers and others who fund the financial safety net. Hence, the liquidity tools of central banks and the emergency powers of other public authorities should not be used indiscriminately, which means that those who stood to gain from the excessive risk-taking should bear the costs. They include managers and the existing shareholders.

Where problems are not systemic, speedy resolutions are possible ...

27. In previous resolution episodes, governments that faced problems deemed to be more contained directed the bulk of their resolution activities toward resolving troubled or failed institutions as expeditiously as possible. Where problems were not considered to pose systemic risks, authorities had a freer hand to focus on stopping the flow of funds to unsound credits and speeding up the disposal of bad assets. Examples include New Zealand, Spain and eventually the United States in addressing the thrift crisis.

... but liquidations may not be the best option.

28. In contrast, when the difficulties institutions face are from external sources that affect all or most banks (e.g. a sudden change in policy or other macroeconomic event), there may be a case for more lenient treatment. When institutions are in difficult straits through no direct fault of their own, there may be little moral hazard risk in rescuing them and liquidations may not be the best option.

The goal of public policy towards the financial system has generally not been to reduce the probability of failure to zero but, rather, to make the

29. Second, the scenario in question relates to problems at only a few institutions. By themselves, isolated failures need not be causes for concern, even with financial institutions. Failures are a normal outcome of the proper functioning of a competitive economy. The failure of individual projects and at times of entire firms (including financial ones) is one means by which competitive markets weed out weaker performers. Indeed, sustained economic growth requires that resources are reallocated in this way, shifted from activities that are no longer profitable to more productive uses.

system more resilient in the wake of failures.

30. But under a crisis scenario, shoring up the system itself is the primary goal. This goal was the primary objective in the response to crises in a number of jurisdictions, including Australia; Finland; Hong Kong, China; Japan; Italy; Mexico; Norway; and Sweden. When problems are widespread, uncertainty tends to be high and confidence in the system becomes quite fragile. Closing institutions or allowing them to fail under these circumstances can precipitate runs or, in a worst-case scenario, a wholesale panic.

But closing institutions in the midst of a crisis can be problematic.

31. The recent failure of Lehman Brothers is arguably a prime example of the latter phenomenon. The experience of Hong Kong, China provides an example in which the closure of one institution has sparked runs on others. As a matter of policy, Hong Kong authorities focus on systemic concerns in determining whether to offer assistance to troubled institutions.¹¹ In the response to banking problems in the mid-1980s, all of the cases were deemed to have systemic implications for various economic and political reasons, which meant that the troubled institutions were rescued. But those same considerations did not prevail in 1991 when the BCCI Group's Hong Kong subsidiary encountered problems, so it was allowed to fail. As there was no deposit insurance in place, the failure of the bank prompted wider concerns about the health of other retail banks and runs started on a few of them.

32. For these and other reasons, which include concerns about disrupting access to credit by creditworthy borrowers and the effects an institution's closure may have on the local community and on depositors, who must establish a relationship with another institution, authorities everywhere have generally proved reluctant to close banks, especially medium-sized or large institutions.

Lesson: Liquidations tend to be costly and are perhaps best used as a last resort or only under specific circumstances

Even in countries where the law requires 'prompt corrective action' liquidations have been used infrequently owing to the costs.

33. In the United States, where requirements for 'prompt corrective action' compel the resolution authority to pursue the least-cost resolution method, except in systemic cases and even then only with the agreement of the Secretary of the Treasury, who makes the determination after consulting with the President,¹² outright liquidations have been used infrequently. For example, the FDIC used liquidations in only about 7 per cent of the resolutions of failed banks in the 1980s, while the RTC used liquidations to resolve only 12 per cent of its cases.

Legal impediments have also sometimes argued against closures.

34. The option of placing a bank in liquidation has also been avoided in other crisis resolutions, especially when other costs of the procedure – administrative and legal costs in particular – have been high. In Mexico in the mid-1990s, for example, liquidation was possible, but procedures were lengthy and considered too cumbersome to make it a viable option. Inefficient bankruptcy procedures were also prohibitive

¹¹ When problems in the banking sector in Hong Kong, China, emerged in the mid-1980s, there were no legal provisions for establishing centralised *asset management companies* to manage non-performing loans. Thus, for institutions declared to be insolvent, the only options available at the time were *closure and liquidation, government acquisition and capital injection, or government assisted take-over*, and because all large banks at the time were considered to be systemically important, the first option was not thought to be viable.

¹² The consideration as to whether to grant the exemption requires the recommendation by two-thirds of the Boards of both the FDIC and the Federal Reserve System.

factors in a number of Central and Eastern European resolutions. In some cases, owners of troubled institutions could take legal action against resolution authorities for closing an institution “indiscriminately” or on other terms they considered to be invalid. In such cases, officials could be held personally liable for damages. These types of considerations have also gone against the use of liquidations.

Lesson: Forbearance may be helpful in avoiding severe dislocations, but it is a risky proposition that can prove very costly if used improperly

There are different forms of forbearance.

35. As noted above, abruptly closing banks or allowing them to fail in a climate of widespread uncertainty can prompt a crisis of confidence. In banking, for example, an event that precipitates a run on one bank can result in more generalised fears on the part of depositors and spread contagiously to other banks. The record shows that system-wide financial crises have often occurred in the wake of a widespread loss of confidence that has often been prompted by the failure of a major financial institution. In concentrated systems dominated by a few large intermediaries, such a failure on its own might prove to be a systemic event. In more decentralised financial systems, the propagation of a shock to one institution will generally result from negative externalities of some form.

There can be tactical reasons for using some of them.

36. Financial system policy aims, in particular, to avoid such outcomes by preventing problems at individual institutions and markets from propagating. The costs financial crises have imposed on countries have been quite large, and the systemic consequences of the failure of a large institution may well constitute a quantum leap compared with the failure of a smaller institution.

Avoiding the consequences of large bank failures has been one.

37. For these reasons, authorities in many jurisdictions have treated failures of large banks differently than failures of small banks and have reacted to widespread problems in different ways from isolated cases. Just as the failure of large institutions can be unpalatable from an economic perspective, it would generally not be feasible or economically rational to force the closure or suspension of a large proportion of the financial sector, especially while a crisis is still unfolding.

Box 3**The varying degrees of forbearance: buying time versus ‘turning a blind eye’**

Forbearance, whereby supervisory authorities use their discretion to buy time for institutions to attempt to restore depleted capital, has been applied in both industrialised and emerging economies. It has taken many forms, distinguished in some cases by the types of rules involved and in others by the degree to which existing rules are waived or voided.

With respect to the first of these dimensions, type, the most common form is regulatory forbearance, whereby existing regulations and standards are waived for one or many institutions (e.g. typically capital adequacy rules in the case of banks). Loan classification standards have also been relaxed, and institutions have been exempted from following other standard accounting practices (accounting forbearance). Forbearance may also result in more lenient tax treatment or in explicit tax breaks.

With respect to the second dimension – degree – one common form of forbearance entails supervisors or regulators allowing institutions known generally to be undercapitalised to remain open under existing management for some extended period of time. In a more severe form, institutions that are generally known to be insolvent are allowed to remain open. Authorities simply turn a ‘blind eye’ to the condition of the institutions (or perhaps even the entire banking system) in the hope that they will recover. In many such instances, authorities have ignored periodic violations of laws, standards and regulations. In some cases authorities have taken the extra step of easing line-of-business limitations with a view toward providing institutions new profit opportunities. The S&L episode in the United States is an oft-cited example.

The appeal of forbearance is that it does not always turn out badly, although that has often been the case. It may nonetheless be expedient when institutions that have otherwise been healthy and well-managed suffer an exogenous shock that causes an abrupt deterioration in the financial condition of its borrowers. A natural disaster is a classic example. In such a case, forbearance may succeed in enabling the economic situation of the borrowers (and hence, the creditors) to recover, without inducing much moral hazard or other unintended consequences. But forbearance may be highly inappropriate and costly when it is applied to institutions that are poorly managed.

Cases in which problems have arisen outside the banking sector have been examples where forbearance has succeeded in buying time.

38. In such circumstances, there may be a tactical case for forbearance, albeit properly conceived. There have been some positive examples, and others not. One example of the successful use of forbearance occurred in early 1980s in the wake of the Latin American debt crisis. In the aftermath of the crisis, a number of major money centre banks with heavy exposures to the indebted countries were severely undercapitalised, technically insolvent in the eyes of many observers. But they were treated leniently by their regulators, allowed to gradually build up their loan loss provisions over time against the impaired sovereign claims on their books and avoid a severe write-down of their capital.

39. Cases of successful forbearance have typically occurred when the institutions in question have been temporarily impaired, but retained a positive franchise value in the sense of having the capacity to restore their capital over time by retaining profits. They have usually been confronted by sudden, but sharp, macroeconomic misalignments or shocks that were generally expected to be temporary. For banks that are well managed, forbearance can be used to buy time until conditions normalise and enable otherwise sound institutions to improve their balance sheets and return to profitability. Such actions may precede the official reporting cycle.

40. In the response to the U.S. thrift crisis, some institutions with significantly impaired capital, but whose management was deemed to be good were treated thusly, given time to work through the problem. In some of the cases, institutions that would have failed a rigid capital rule were it not for regulatory forbearance did manage to recover. But despite those successes, the thrift crisis is one of the classic examples in which ‘turning a blind eye’ proved in the end to be disastrous (Box 4).

Box 4**The U.S. thrift crisis (1970s – 1980s)**

The sharp rise in interest rates in the early 1980s resulted in significant losses for savings and loan institutions in the United States, mainly owing to the maturity mismatches between their assets, which consisted mostly of long-term, fixed-rate mortgage loans, and their short-term deposit liabilities, which were subject to interest-rate ceilings. As market rates climbed above the deposit rate ceiling, thrifts were subject to disintermediation, which in the economic climate of the time became severe.

In response, throughout most of the 1980s, the federal regulators of the savings and loan industry, which were independent of the bank regulators, adopted several forbearance techniques in the hope that profitability could eventually be restored. These included allowing the institutions to offer first adjustable-rate mortgages, then consumer credit and commercial real estate loans to reduce the concentration of home mortgage loans on the institutions' books. But rather than enhance supervisory oversight to address the expansion of activities, the number of examiners actually was decreased. Perhaps not surprisingly, allowing the institutions to move into riskier assets resulted in a separate, but linked, asset quality crisis by mid-decade.

In addition to these measures, authorities implemented various regulatory forbearance measures, lowering required capital levels, allowing extended amortisation of loan losses, allowing supervisory goodwill and other intangible assets to count as capital, and placing deposits in failing S&Ls in exchange for net-worth certificates, which the institutions could then count towards their regulatory capital.

The net effect of these policies was to allow a number of insolvent and severely undercapitalised S&Ls to continue to operate and make new, most often bad, loans. There was evidence as well of insider abuse, fraud, unsound banking practices, including inadequate credit appraisals, and other malpractices at the insolvent institutions, which came to be known as zombie thrifts.

The ultimate cost of this forbearance to the taxpayer was of course quite significant, most of it owing to losses incurred by the zombie thrifts.

But there are many examples where it has not worked. Thus, regulatory forbearance should be used very sparingly and should ideally be combined with visible progress towards stronger prudential standards.

41. But the US thrift crisis is not the only example in which regulatory forbearance has permitted troubled institutions to remain open, and unfortunately, in most cases to continue to accumulate losses. In Korea, for example, emergency support from the government was funnelled by banks in the form of emergency ('bankruptcy avoidance') loans to their associated financially crippled corporations, which proved unable to repay them. Similar outcomes occurred elsewhere in East Asia when authorities were unable (or lacked the will) to stop the transfer of resources out of financial institutions that had long before become insolvent. And Japan spent the better part of a decade (unsuccessfully) attempting to resolve its financial sector difficulties through a policy of low interest rates and hiding the real losses embedded in its financial system.

42. Critics of forbearance argue that the instances of successful forbearance are few, while in the majority of cases, technically insolvent banks have simply taken advantage of the support they have received to continue to operate unsuccessfully as before or to expand into riskier activities in a gamble for redemption. They argue that forbearance has often raised the costs of crises well above what would have occurred had troubled institutions been closed before their capital was exhausted. Many call attention to the apparent contradiction involved in relaxing requirements just when they begin to bite.

43. Proponents of forbearance argue to the contrary that regulation should be mindful of the state in which it is being implemented, and that the midst of a crisis is perhaps not the best time to show concerns about moral hazard. They argue that mechanically enforcing requirements can induce procyclicality, which can be extremely damaging if the system is facing a large shock. The debate rages on.

Lesson: Guarantees may be necessary, but they must be properly structured and be given a finite life to avoid high costs and moral hazard

Financial transactions often take place in an environment characterised by information asymmetries and agency problems.

44. Financial markets often function properly, which means they achieve their core objective of ensuring that scarce savings are allocated optimally among competing investment opportunities. But when financial markets malfunction, they can have the opposite effect, giving rise to broader economic instability.

45. Prevention is better than cure, so regulators typically establish entry requirements (e.g. fit and proper tests) for financial firms to affirm their quality *ex ante*, supported *ex post* by compliance monitoring and strict enforcement of conduct of business rules to provide institutions with incentives to adopt administrative procedures that ensure consumers are competently and honestly served.¹³ Conflict-of-interest rules and customer suitability requirements serve a similar function.

Among other shortcomings, market imperfections impede efficient contracting between end suppliers and end users of funds.

46. But honesty cannot be legislated and trust and confidence, once lost, are difficult to restore. There are no obvious tools for doing so. As a final recourse, authorities have had few options to address the problems faced by unsophisticated consumers/investors other than various forms of bonding arrangements (i.e. guarantees), which are designed to insulate protected parties from losses, either partially or completely. These sorts of mechanisms are quite common in the financial services industry. Government sponsored arrangements exist in many OECD countries for depository institutions, insurance companies, and certain pension plan assets.

Financial system, policy must be directed at redressing market failures, but needs to do so in a way that does not compromise incentives towards prudent behaviour.

47. The problem with formal insurance schemes and implicit guarantees is that they have the potential to give rise to moral hazard. For instance, the moral hazard problem associated with deposit insurance arises from the potential for the deposit-taking institution, the depositor, or both to be less “prudent” than might otherwise be the case, relying instead on the existence of the state-supported safety net to underwrite mistakes.

48. In the case of the lender-of-last-resort function, a practical answer to mitigate moral hazard is through so-called ‘constructive ambiguity’, meaning that central banks reserve the right to intervene to preserve stability but give no assurances, explicit or implicit, to institutions. Such an approach is intended to make the latter act more prudently, given the uncertainty as to whether they would be rescued in a crisis.

49. But once a crisis unfolds, the story can be quite different. When confronted with the potential failure of large institutions, many authorities have been reluctant to take the chance on their watch that non-intervention will work out for the economy.¹⁴

¹³ There are two main sides to conduct of business rules: one focuses on financial institutions’ behaviour in the market at large and their relationship with one another; the second addresses their client interface, which covers such issues as anti-fraud, malpractices, disclosure, conflicts of interest and other aspects of the service provider-client relationship.

¹⁴ Where size might raise more serious public policy concerns is in the particular case of large institutions domiciled in small countries. The total market capitalisation of banks based in some small countries constitutes a relatively large share of GDP, at least on the basis of cross-country comparisons, and the failure of such a

And quite possibly, those who have taken the chance probably regret doing so. Moreover, as noted before, there is also a degree of irrationality in forcing the closure of a large segment of the financial system when problems afflict multiple institutions.

The use of safety net measures (e.g. lender-of-last-resort facilities) is appropriate in crisis situations to avoid negative externalities of financial instability.

50. As a consequence, once the scale of the problems affecting the financial system passes a certain threshold, there may be little alternative to providing general financial assistance.

51. Financial support to troubled financial institutions takes many forms. A common feature of support programmes in most countries facing crises, particularly during the initial stages of problems, has been *liquidity support* to institutions in distress (Table 3). In many of these instances, the central bank, in its role as ‘lender of last resort’ was the source of the support,¹⁵ most often in the form of loans extended against collateral.

52. The government itself has often been a source of financial support to troubled financial institutions particularly when the system as a whole has been in distress. Broad-based assistance to troubled financial institutions has typically been given in the form of a *guarantee*. In a few cases, governments have provided blanket guarantees (excluding share capital and perpetual debentures) to all banks with a domestic charter (e.g. Korea and Sweden), but generally some restrictions have applied. For example, in some cases the size of the guarantee amount has been strictly limited (as was the case initially in Finland).

53. Guarantees may be targeted to specific groups of creditors or target particular categories of liabilities. For example, in Mexico, the government announced repeatedly that all deposits would be covered, but in addition, banks were given a foreign exchange guarantee. Guarantees have also accompanied sales of problem banks (e.g. Hong Kong, China) and sales of impaired assets (e.g. Korea, Slovakia, and Spain).

But there are also drawbacks. The primary drawback of the safety net is moral hazard ...

54. The difficulty with central bank credit and other forms of immediate financial support to financial institutions is the risk that good money will be thrown after bad. The classic argument against *liquidity support* is that central banks should abstain from providing open-ended emergency liquidity support to a bank unless it is satisfied that the bank is viable and that oversight is adequate. Without adequate oversight, open-ended liquidity support is doomed to fail because managerial and shareholder incentives suddenly shift toward increased risk-taking for a financial institution that is already insolvent or is nearly so.

... and there is some evidence that open-ended support from central banks has

55. Experience has shown, in fact, that some institutions covered through liquidity support programmes invariably do prove to be insolvent (e.g. Japan and Hong Kong, China) and losses have been incurred (e.g. Finland, Norway, and Sweden). In the United States, prior to the adoption of ‘prompt corrective action’ requirements, at

bank could have sizeable effects on the domestic macro-economy; similarly, its rescue would pose a significant financial burden for the government.

¹⁵ In Spain, the central bank was the ultimate source of liquidity support, but the funds actually were disbursed by the Deposit Guarantee Fund that had been set up in 1977 at the beginning of the crisis period. The Bank of Mexico was also the source of liquidity support, but the funds were actually disbursed by the Deposit Insurance Fund. In Hong Kong, China the government itself was the source of liquidity support.

often resulted in losses. one time, an estimated 90 per cent of lender-of-last-resort credit extended by the Federal Reserve reportedly went to institutions that subsequently failed.

56. Critics of extended liquidity support from central banks argue that governments more often than not have used liquidity support as a form of forbearance, in effect, delaying crisis recognition and avoiding intervening in institutions that *de facto* have already failed.

57. But, in fact, central banks face a real difficulty during financial crises or periods of widespread distress in distinguishing illiquid-but-solvent institutions from insolvent institutions, at least while a crisis is still unfolding. Some observers hold to the view that crisis conditions make it all but impossible to distinguish illiquidity from insolvency and argue that a generalised crisis leaves authorities with little option but to extend liquidity support to prevent conditions from worsening. This debate also continues.

Lesson: It is important to develop a thorough understanding of the various dimensions of the too-big-to-fail phenomenon and its implications

Some form of consolidation has been the most frequently used technique to resolve troubled institutions. 58. In many countries, but especially among industrialised ones, some form of consolidation, whereby weaker institutions are merged with or acquired by better capitalised and more financially stable institutions, has been the most frequently used technique to resolve failed institutions. A number of variations of *purchase and assumption transactions* have appeared in practice. Usually, a healthy domestic institution purchases all or part of a failed institution and assumes all or some of the latter's liabilities.

59. In a "whole bank" purchase and assumption transaction, rather than offering selected loan pools and cash equivalent assets to potential acquirers, the resolution authority offers all assets of a failed institution to potential bidders on an "as is" basis. Another variation is the "bridge bank" structure, whereby the resolution authority temporarily acts as the acquirer of a failed institution and assumes responsibility for managing the institution until a qualified private sector buyer can be found (e.g. Czech Republic; Hong Kong, China; Hungary; Japan; and the United States). In some cases, governments divested their holdings by whole bank transactions, while in others gradual sales were deemed more feasible.

60. A problem with the use of consolidation as a means of addressing failures during crisis episodes, especially when large institutions are involved, is that institutions with the necessary capital available will most likely themselves be large integrated organisations. Their participation in purchase and assumption transactions and other acquisitions increases the odds that they themselves become too-big-to-fail or too-big-to-liquidate, and almost certainly too big and complex to be overseen by supervisors on the basis of quarterly snapshots of their condition.

But there is the danger that these combinations can 61. The implications of large size are not unambiguous and depend in part on the institutional setting in which institutions operate. For example, the benefits expected to derive from diversification might tempt institutions to take on levels of

increase the potential for the 'too-big-to-fail' problem to arise, with its attendant adverse consequences for incentives.

risk that can prove insupportable if actual gains disappoint.¹⁶ It is not obvious that an increase in size (and perhaps even in geographic scope) of a financial institution makes the risk that it might fail any greater than before. Growth in an institution's scale or scope can result in either a smaller or a larger probability of failure, depending on the extent to which any increase in its risk-taking is counterbalanced by improved diversification or simply by a larger capital base. But mistakes and accidents do happen.¹⁷ And when problems do occur the systemic consequences of failures grow as institutions become ever larger.

The international dimension is an added complication.

62. The situation is also more complex in the case of internationally operating banks. For example, if a bank in a small country becomes very large through international activity, then its failure might pose a very large burden for the home country and raises the question of whether there needs to be some form of international scheme for dealing with such a failure. In practice, the decision to intervene is left to the discretionary powers of the supervisory authorities in the country in which the troubled institution is located, but any decision taken would also affect other countries in which this institution operates. The decision in this case needs to involve the co-operation of all supervisors and institutions involved.

Lesson: There is a need to properly address interdependencies for institutions operating in or funding themselves across multiple jurisdictions

Traditional banking is an inherently risky business.

63. Fragility in the banking sector has been linked to three characteristics of banks' balance sheets: 1) low amounts of cash and other liquid assets to total assets (fractional reserve banking); 2) low amounts of capital relative to assets (high leverage); and 3) a high share of withdrawal-on-demand deposits to total deposits (high potential for runs). Fragility leads to breakage when something triggers fear on the part of the bank's creditors.

Collecting small denomination deposits and transforming them into longer-term loans entails considerable liquidity and credit risk.

64. The usual reference in this context is to depositors. Retail depositors in a fractional reserve system know their deposits are not backed one-for-one by liquid assets. If some event cause them to become uncertain about the financial condition of their bank, they may fear that the only certain way to be sure of getting all of their money out in time is to be one of the first to withdraw funds before the bank fails. Even otherwise healthy banks can fail if a large fraction of their depositors or general creditors behave this way. Deposit insurance schemes were created in express recognition of this vulnerability of banks to an abrupt evaporation of their access to liquidity or sudden inability to liquidate assets at reasonable valuations.

Modern banking retains these risks and adds various

65. But as noted before, banks have responded to increased competition by shifting their business models from a reliance on traditional deposit-taking and lending to a more diverse range of activities, often using cross-border structures. As a result of

¹⁶ Empirical studies based on pro forma analyses of potential combinations of different financial services often confirm the existence of such diversification benefits, but more direct analysis of the equity market performance of financial groups during market downturns fails to provide similar support. See the analysis in Sebastian Schich and Ayumi Kikuchi "The Performance of Financial Groups in the Recent Difficult Environment" Financial Market Trends No. 86, March 2004, pp. 61-83.

¹⁷ In particular, there appear to be limits to managerial capacity as institutions grow in size and complexity and stray from their particular core talents.

market risks to the mix. the shift from traditional lending to trading and market-making in various market segments, the typical large bank's balance sheet has become much more complex and *market risks* have grown in importance. Like traditional credit risk, market risk can lead to significant losses and ultimately to failure if not managed appropriately. But, in contrast to credit-related losses, which can take time to develop, losses owing to market risk can occur quickly.

Box 5

The failure of Continental Illinois Bank

At the time of its failure in 1984, Continental Illinois was one of the largest banks in the US. Located in a unit-bank state (no branching) and subject to US regulations against interstate banking, the bank funded its activities partly through fairly heavy reliance on wholesale deposits, 40 per cent of which were from the international markets, while another 16 per cent or so came from inter-bank deposits.

In the early 1980s, the bank began to suffer losses on its loan portfolio, which featured sizable concentrations in LDC debt and loans to the energy sector. By 1984, concerns about the problems in the bank's loan portfolio had begun to intensify and large depositors began to withdraw funds. In contrast to the typical bank run, this run began in the international interbank, as banks in Europe, Japan, and other parts of Asia began to cut their credit lines and withdraw from overnight funding agreements. Non-bank institutions in the US began to follow suit subsequently, with total withdrawals eventually outstripping the bank's available liquidity and capital.

The continuation of the run prompted the FDIC to announce a guarantee for all of the bank's liabilities. But this failed to assuage creditors. Just two years before, the failure of Penn Square Bank resulted in uninsured depositors suffering losses, an episode that was apparently still fresh in the minds of Continental Illinois' creditors.

As a major correspondent and money centre bank, Continental had numerous interconnections with other institutions, which were later estimated to number roughly 2300. Although the precise number was not known at the time, the authorities nonetheless feared a systemic risk if Continental failed. Consequently, a rescue operation was begun, consisting of a line of credit from a large group of healthy banks, loans from the central bank, and an infusion of capital by the FDIC. These actions succeeded in halting the run and there was no broader contagion.

The shift in business mix has often occurred via convergence across sectors, giving rise to a number of large, integrated intermediaries.

Various inter-dependencies among them increase the potential for problems in one institution or

66. As a consequence of the increase in cross-sector convergence, large complex institutions have become a standard feature of most national financial landscapes. The European financial system has in many respects been dominated by universal banks, while in the United States, large integrated commercial banking organisations also exist, but given the relatively greater role of capital markets, a handful of the large, integrated intermediaries have focused on the securities business.

67. The consequence of size in this more integrated world is not just that the actual insolvency or the perceived risk of failure of large intermediaries has larger negative implications for the financial system than in the case of less integration. It is also the case that their greater scale limits their ability to take actions that would reduce their exposure in the event of a shock without creating the risk of magnifying the shock.

68. For example, an institution's efforts to liquidate assets during times of financial stress only adds to the downward pressure on securities prices in the market and on the value of the its own remaining holdings, which worsens, rather than

market segment to spread. ameliorates, its condition. In worst-case circumstances, an institution facing a funding problem may be forced into insolvency.

69. Assuming the firm's creditors and counterparties have taken adequate steps to protect their interests, it is unlikely that the firm's failure would trigger other defaults, but – depending on the size of the firm's exposure – the probability is perhaps not zero. Nonetheless, a more likely scenario to domino defaults is a stampede to the exit, as creditors and counterparties attempt to liquidate collateral. Of course, in an existing bear market, if everyone tries to sell at the same time, the price collapses.

Lesson: It is important that prudential requirements and other safety and soundness standards are incentive compatible and properly aligned with developments in risk management

To manage their risk exposures, financial institutions have turned increasingly to advanced statistical techniques.

70. To manage the risk exposures that arise from their expanded activities financial institutions have turned increasingly to advanced statistical techniques and the use of analytical models as the basis of risk measurement and pricing, sometimes in place of more traditional qualitative judgments. In this context, commercial banking organisations, their securities arms, independent investment banks and other intermediaries have all become fairly active users of credit derivatives and other such “hedging” instruments to off-load specific risk exposures or to take positions with respect to particular outcomes.¹⁸

New risk management techniques and other innovations can be welfare-improving ...

71. Successful process innovations such as new risk management techniques and product innovations (the creation and introduction of new financial instruments) have the potential to facilitate a more efficient allocation of resources and, thereby, a higher level of capital productivity and economic growth. For example, improved risk measurement and risk management techniques can result in a more optimal distribution of risks throughout the system to the extent risks are shifted to parties that have the knowledge and wherewithal to bear them.

... but they can also produce unexpected and undesirable consequences.

72. But innovation can also have undesirable side effects and pose other costs to the system, as occurs, for example, when products are misrepresented to end-users or are inadequately managed with respect to their intrinsic credit or market risks. For instance, the active use of derivative instruments on both sides of the balance sheets of large diverse financial organisations can cause these institutions' exposures to change rapidly, sometimes with severe adverse consequences.

For example, there is evidence that standard VaR models do not perform well under so-called 'tail events'.

73. The historical approach to risk management in integrated financial services organisations was for risks to be managed locally along business lines, such as the credit function within banks and the underwriting function within insurance units, with bottom-up reporting to a centralised management unit to provide for an aggregate view. That approach has proved to be insufficient in the case of complex institutions in the sense that standard risk management tools for the constituent entities on a stand-alone basis, such as value-at-risk (VaR) measures for banks or the stochastic asset-liability approach for insurers, are dependent on historical data and may fail to capture developments under so-called “tail events”.

74. In the catastrophe insurance industry, insurers routinely place bets against

¹⁸ For example, banks, either via their loan departments or through their asset swap groups, have used default swaps as a loan or bond substitute.

Correlations increase during such episodes and institutions find themselves with the same unexpected risk profile.

The failure of risk management models to perform as expected has often proved costly when shocks have occurred.

Some of these problems have occurred during the recent turmoil, but they are far from new.

tail events and most of the time benefit from the steady flow of premiums from their policyholders. But on occasion, the insured event occurs and they suffer losses. But even then, the events typically do not cause widespread dislocation in the industry.

75. In market-based finance, however, tail events typically prove to be serious problems. During tail events, for example, episodes in which asset price movements are at statistical extremes compared to usual experience, correlations may swing widely, in which case the reactions of other market participants become much more relevant to a given institution's assessment of its own risk positions. The dynamics of price movements during these periods for individual assets and for assets in relation to each other tend to differ markedly from those observed in normal market conditions.

A large body of empirical evidence suggests that financial asset prices have "fatter tails" than predicted by the normal distribution and, thus, extreme outcomes occur more often than expected. Furthermore, the assumption of a constant variance is questionable as the volatility of daily financial prices is far from constant. The period of historical data used in VaR models is also important, as structural changes tend to have a significant impact on the calculated variances and correlations. Empirical evidence shows that correlations among financial asset prices become stronger when the volatility of financial market is high and, thus, traditional hedges across assets become weaker just when they are most needed. This indicates that VaR models relying on assumptions of normality and constant correlation may not provide robust estimates for the actual risk in times of market uncertainty.

76. The implications relate not only to market liquidity but also to the measurement and management of market and counterparty credit risk. In these circumstances, endogenous risk becomes much more relevant as institutions find themselves needing to liquidate positions in declining markets, thus adding to asset price deflation and possibly to a contagious spread of the pressures.

77. Some of these weaknesses have featured prominently in the current crisis. But they are not new. Most were evident in the LTCM episode. In the case of LTCM its biggest problems was not its strategy *per se* but its extreme use of leverage. In retrospect, LTCM's highly-leveraged investment positions were big enough that a fire-sale liquidation of these positions would have caused severe price dislocations in the markets in which it was involved. These dislocations, in turn, would probably have led to an avalanche of additional losses in the financial system and a drying up of market liquidity.

Box 6**Lessons from the LTCM Crisis**

There were severe dislocations associated with the resolution of LTCM's problems, but in the end there was no messy bankruptcy, collateral eventually moved through the system, losses for most institutions were kept to a minimum (or were masked by profits from other business segments) and no public-sector money was involved. Even so, the event highlighted a few shortcomings of market practices regarding risk management, including, but not limited to, collateral policies.

The event prompted considerable action on the part of the international regulatory community. For example, the Basle Committee on Bank Supervision focused on the perceived lack of transparency in the market, looking carefully at the interactions between banks and highly leveraged institutions. This review identified a number of weaknesses in banks' credit risk management:

- banks received insufficient data from their counterparties, and often based credit decisions on qualitative information;
- the information that was received was not reflective of the entities banks were lending to; and
- competitive pressures acted to limit the degree to which banks required more complete disclosure from their hedge fund counterparties.

After reviewing the findings of its investigation, the Basle Committee issued a set of "sound practices" for banks to follow in managing their risk exposures. These guidelines included:

- banks should establish clear policies and procedures for interactions with hedge funds;
- banks should develop more accurate measures of their credit exposures resulting from trading and derivatives transactions with highly leveraged institutions; such measures need to be more forward-looking and not merely reflect current market prices;
- there should be meaningful overall credit limits for highly leveraged institutions;
- banks must develop appropriate credit enhancement tools that are linked to the specific characteristics of highly leveraged institutions; and
- credit exposures need to be monitored on an ongoing basis, taking into account the trading activities, risk concentration, leverage and risk management processes of the counterparties.

The LTCM episode suggests a number of lessons, with implications for counterparty risk, liquidity risk, collateral requirements, and risk management more generally.

78. The LTCM saga suggests a number of other important lessons regarding risk and its management and the important distinctions between different types of risk. For example, credit risk can be controlled. To reduce this risk to an acceptable level counterparties can restrict their dealings to only reputable, highly rated firms and properly collateralise their exposures, and investors can invest only in high quality instruments. Even a portfolio of low-quality bonds can have its credit risk managed to a reasonable extent by sufficient diversification across borrowers.

79. Market risk generally cannot be reduced in this fashion. Under certain conditions, market exposures can converge and a portfolio that was presumed to be diversified can become overly concentrated in a small number of markets.

It also showed clearly the dangers of leverage ...

80. Another important element of risk is that, when dealing with highly leveraged counterparties/investment vehicles, market risk can quickly evolve into credit risk. This challenges the task of risk management.

81. The events surrounding the LTCM bailout suggested as well that the typical

counterparty needs to focus on creditworthiness and collateral. Collateral has two aspects: 1) collateral taken is adequate to cover the exposure; and 2) the assets received as collateral can be realised without much sacrifice of value. It should be added that if counterparty risk is not accounted for properly, even rigorous collateral practices can provide only a false sense of security.

... and weaknesses in the management of over-the-counter transactions involving innovative products.

82. Another lesson concerns product innovations. Financial markets have a range of functions. These include: the efficient allocation of capital; the development of efficient prices, which fully reflect all information about the fundamental value of a security traded on the market; and the availability of sufficient liquidity, characterised by the ability to accommodate incoming orders in a timely manner (immediacy) and the ability to satisfy new orders with minimal effect on prices. Taking and transforming risks is another important function of the financial system. Repos, swaps other derivatives and some structured products support many of these functions by enhancing the ability of financial market participants to handle fluctuations in exchange rates, interest rates and security prices. On balance, most of these activities have been beneficial in the sense of increasing the flow of international capital and making financial markets more competitive and more efficient. But they must be monitored sufficiently and subject to prudent rules of conduct.

83. Monitoring, in turn, requires transparency. In many crisis episodes, disclosure has been inadequate and transparency has been lacking.

The issue for policymakers is not to block innovations, but it is incumbent upon supervisors and regulators to ensure that they understand them.

84. For policymakers, it must be stressed that the purpose of oversight is not to impede reasonable risk taking, but authorities need to require institutions to handle their risk exposures properly through control systems, appropriate capital requirements, etc. A related requirement is the need for supervisors and examiners to develop the expertise to understand and keep pace with the continuing evolution of asset valuation models and risk management techniques and processes.

85. Both crisis prevention and crisis management would likely be improved by additional communication and co-operation among central banks, finance ministries, and the range of other financial supervisors, both domestically and internationally. Important components of improved crisis prevention and management include policies and procedures for prompt corrective action to deter and resolve potential crises. Such policies and procedures must be designed so as to minimise moral hazard.

Lesson: Runs on market liquidity occur more often than runs on bank deposits

Erosion in market liquidity is a serious problem.

86. An important undercurrent running through many of the episodes cited above is the importance of liquidity management. In many crises, liquidity in trading and funding markets has suddenly evaporated, prompting failures of institutions that were not adequately protected and at times of entire market segments.

Box 7**The failure of the junk bond market**

In the 1980s, corporate finance in the US was marked by rapid growth in leverage, much of it associated with the rise of the junk bond market. A number of factors supported the growth of the market, including the withdrawal of insurers from the private placement market, which left traditional issuers in that market needing an alternative source of funding, and the growth in take-over and leveraged buyouts. The high-yield market initially was a source of funds for credits that could not offer securities in the investment-grade segment for various reasons, including among others small little known emerging companies. But it was the use of the market for LBOs and take-overs that really sparked the growth in junk bond issuance, which enabled corporate raiders to the ability to take over large companies with minimal assets so to speak.

The market also depended on the active support of the investment bank, Drexel Burnham Lambert, which had set out in the late-1970s to create such a market. Drexel was aided in this effort by certain thrift institutions and insurance companies, with which it had established close working relationships. Drexel effectively performed the functions of market maker.

Institutional investors such as thrifts and insurance also were among the major investors, attracted by the equity-like returns on a fixed-rate investment. For a while, despite the high leverage of the issuing entities, the market functioned well. But things turned sour in 1989. Demand was hit hard by a provision in the thrift bail-out bill, which ordered thrifts to dispose of all junk bond holdings. The forced selling by thrifts came at a time when the market had already been weakened by the default of a major issuer. The combined events proved too much for the market to sustain, as reflected in a complete drying up of liquidity and a collapse in prices.

Drexel itself succumbed in February 1990, as the declining value of its own holdings led to its downgrade by the rating agencies, which led to its consequent inability to roll-over the commercial paper it had relied on as a main source of funding, while banks were unwilling to provide substitute financing.

The authorities ensured an orderly winding down of Drexel, but as the firm was deemed not to pose any systemic threat, and as the junk bond market itself was also not considered to be of systemic importance, no effort was made to intervene.

Lesson: An important step in crisis resolutions is the treatment of non-performing assets

An important component of the framework for winding up financial institutions during times of crisis is the treatment of non-performing assets.

87. Cross-country experience suggests that establishing asset disposition strategies that adapt to the changing circumstances of the banking system is an important requirement for successful resolutions. One of the early steps in this process is to examine institutions' balance sheets to obtain an accurate assessment of the extent to which asset quality is impaired. This is not always straightforward. Various players, including bank managers and their corporate customers, have incentives to conceal the true quality of their balance sheets. Instances in which non-performing loan problems have reached systemic proportions have often reflected a legacy of weak credit assessment by banks, particularly as regards connected lending or loans to state-owned enterprises. Typically, accounting standards have not conformed to international standards—the institutions in question have often had inadequate recognition of existing non-performing assets and insufficient provisioning for emerging problems or loans known to be at risk. Moreover, the coverage of off-balance-sheet and group exposures has been incomplete. In addition to assessing asset quality directly, it is also important to value collateral, since in most cases, the market value of collateral will be considerably less than its book value.

88. Once an accurate assessment of troubled institutions' balance sheets has been obtained, a major decision is to determine whether or not to transfer management of the impaired assets from the originating lenders. Some researchers argue that it is best to leave impaired assets with the originating bank, which, given its lending

relationship with the borrower, is better positioned than outsiders to know the borrower. Leaving loans with the originator would allow the credit relationship to be rehabilitated if the loan is eventually repaid.

A key issue is whether institutions can be trusted to manage the assets on their own or whether the assets need to be separated and managed externally.

89. The counter-arguments for “carving out” bad loans from the originating bank are based on the view that, in situations of distress, managers’ incentives may become perverse. Thus, to avoid situations in which banks advance debtors new loans to meet scheduled repayments of principal or cover interest due on old loans to keep the borrowers (at least technically) current, it is argued that non-performing assets should be managed externally. Those arguing against leaving the management of bad debts with the lending institutions argue further that if a bank is forced to manage bad assets, it might become overly risk averse and refrain from new lending in an attempt to rebuild its capital.

90. *On-balance sheet* approaches to restructuring have included segregating bad loans from the rest of the bank’s assets and managing them separately (‘loan hospital’), debt-for-debt exchanges (‘work-outs’) replacing existing credit by new ones that are different in maturity structure or conditions, joint creditor work-outs and debt-for-equity swaps.

91. *External* approaches remove bad loans from the bank’s balance sheet. Commonly non-performing assets have been swapped for government bonds (‘asset carve-out’), but in cases where secondary markets for loans existed, loans have been sold at their market value. The use of asset management companies has been common, while in some other instances loans have been “sold” to a subsidiary of the failed institution, in effect, creating a ‘good’ bank and a ‘bad’ bank, but marked by strict institutional separation. For either approach, the legal framework must be accommodative to the work-out process if the costs of the restructuring are to be controlled. A major requirement is for the restructuring entity to have legal backing to exercise claims on assets and to recover the proceeds of sales of such assets if they are not serviced.

Many resolutions have featured some form of centralised asset management company.

92. In some resolution efforts, a centralised asset management company has been established, which typically takes control of the impaired assets as part of efforts to re-capitalise a bank. In practice, there have been two main types of asset management company: those established for the rapid disposal of impaired assets and those set up also to expedite corporate restructuring.¹⁹ Different countries have employed variations of the two techniques to deal with asset and debt recovery. Liquidation agencies have been established to resolve failed financial institutions through purchase and assumption transactions or other methods, with the aim of selling off fairly rapidly any performing or non-performing assets that could not be sold to the acquirers (*e.g.* Slovakia). Restructuring agencies, as the name suggests, have usually been aimed at restructuring and liquidating non-performing loans over a longer period of time (*e.g.* as in Australia). Some agencies have carried out both functions. For example, asset management was integrated with bank rehabilitation or closure in Japan, Mexico, Spain and the United States. Only a few of the countries covered in the CMF survey did not establish any type of asset management company to handle the disposition of bad assets (*e.g.* Hong Kong, China, New Zealand, Norway and Poland).

They come in two varieties: those focused on liquidation, with the aim of selling off assets quickly,

¹⁹ See Daniela Klingebiel, *loc. cit.*

and those focused on restructuring, which aimed at managing assets over a longer period of time.

93. In some cases, asset management companies have been required by law to pursue certain objectives. For example, the operations of the RTC in the United States were directed toward achieving three (inconsistent) objectives: (1) minimise losses to taxpayers, (2) sell the assets quickly and (3) limit the impact on real estate and financial markets, which forced the agency to develop and implement compromise solutions.

94. A common approach for acquiring legal to the assets has been for them to be purchased with government guaranteed bonds, under the assumption that the entity will dispose of the assets before the bonds mature, at which point the proceeds from the sale can be used to retire the bonds. Another arrangement has been for the asset management company to be funded separately up-front, which then uses its capital to purchase non-performing assets from failed institutions.

95. A variety of approaches have been used to determine the purchase price of non-performing assets. One alternative is to purchase all loans using a uniform price (e.g. a fixed proportion of book value, as in Sweden). This method allows for a quick transfer of the assets and avoids any delays that arguing over terms with the banks would entail. The problem with the approach is that many assets will not be correctly priced at their current market values (assuming this can be assessed), creating an adverse selection problem; that is, banks would have an incentive to sell their worst assets to the asset management company, since the price paid would likely be above their true market value, while retaining the assets with better prospects.

96. An alternative method to the uniform price method has been for the asset management company to set a price that is discounted from the assets' presumed market value under normal market conditions. This price typically exceeds the amount that would be raised in an immediate "fire sale" but would still impose some financial loss on the owners of the banks. Yet another approach was pursued by the RTC in the United States, which contracted out many asset sales using competitive bidding for fairly homogeneous assets. For the other, more heterogeneous assets, a variety of other methods were used to establish the price.

97. The final step in the process is distribution. In this context, It is important not to lose sight of the fact that resolution activity is taking place under the same stressed market conditions affecting market participants more broadly defined. Asset distribution under these conditions can have marked adverse price impacts.

98. Countries having the most success with managing non-performing loans have been those that pursued active management strategies, which were designed to maintain the market value of the assets until such time as they could be sold.

Lesson: Weaknesses associated with asymmetric, insufficient, or incorrect information are endemic in modern financial markets and have yet to be successfully addressed

Information problems are at the core of many problems in modern financial markets.

99. Situations in which financial markets may be inefficient or fail are when market power exists (including imprudent and fraudulent behaviour), when marked differences exist in information endowments or when new information is poorly distributed (including among others moral hazard, adverse selection and free-rider problems), and when externalities are not properly internalised. These are the core weaknesses in financial markets. They can be managed and perhaps controlled to an

extent, but they never completely disappear from the system. They simply manifest themselves in different ways over time. To wit, many of these problems have featured prominently in the current crisis, but they have also been present in previous episodes.

There have been many initiatives over the years to address them, including a rash of measures adopted after the corporate scandals of the late-1990s.

100. Back in the late 1990s, evidence of aggressive accounting practices by some companies, lapses in investor oversight, and gaps in regulatory enforcement emerged. Investor trust in reported earnings and accounting practices was shaken by several major restatements of earnings by high-profile firms in North America and Europe, including WorldCom, Xerox, Parmalat, Vivendi and Nortel. These incidents brought issues already raised by Enron's collapse into sharper focus,²⁰ fuelling a debate over accounting, disclosure and transparency issues.

101. These events raised serious questions about the quality of financial reporting. A key purpose of disclosure requirements is to address market failures caused by incomplete or asymmetric information to ensure that investors receive the information they would require under reasonable circumstances to make informed investment decisions. Shareholders are residual claimants on the value of a company, entitled to what is left over after all other claims have been settled. Being last served entails risk. There is the normal business risk that the firm's strategy or asset mix will fail to generate an adequate return, as well as the more unusual risk of fraud or other undesirable behaviour on the part of management and other company officials.

102. Financial markets cannot function effectively unless participants act with integrity and there is adequate disclosure to facilitate informed judgments. To facilitate monitoring by outside investors and to promote market discipline, disclosure rules require a display of earnings and capital, depending on the type of company involved and the jurisdiction. For instance, separate reporting rules are often applied to banking institutions. Accounting standards and a high-quality audit profession are called upon to ensure the quality of regulatory reports and public disclosures.

Considerable differences remain, however, regarding such important issues as the best portrayal of the "market value" of an institution's holdings.

103. While there are economy wide objectives for conduct and disclosure regulation, the complexity of financial products and the specialised nature of financial markets have led most countries to establish specialised regulatory arrangements for the financial sector. The notion of what is the "best" portrayal of a financial institution's condition may vary depending on which entity is going to use the information. Prudential supervisors, for instance, are more naturally inclined to favour accounting principles that are more conservative in some respects, but are more conducive to prudent financial risk management and financial stability, while financial accountants may seek what they regard as a portrayal of an institution's true "fair" market value. The tax authorities may have other views.

104. Insufficient or inaccurate information about the financial health of corporate and financial entities hampers effective risk management by the financial system and adds to the uncertainties faced by investors. Uncertainty contributes to the risk of sudden withdrawals of funds. The recent crisis illustrates this point quite well. The complexity of new activities and instruments has made traditional safety and soundness regulation more difficult by making traditional capital regulation less

²⁰ The bankruptcy filing by Texas-based energy-trading firm Enron and the subsequent failure of the Bermuda-based telecom firm Global Crossing both occurred amidst charges of dubious, if not fraudulent, accounting practices.

meaningful. It is difficult to assess the value of assets that are not regularly traded,²¹ over-the-counter derivatives and many structured products being prime examples. Moreover, balance sheet information that is reported at, say, a quarterly interval is less useful in assessing a portfolio whose value can change dramatically within a day.

The shift toward internationalisation of some financial activities and the associated rise in large, sometimes globally active players in some market segments remains a challenge for domestically oriented regulators.

105. There is an international dimension to this issue. A few large global institutions that are active in many markets play an increasingly important role in international financial markets. Reflecting the broad scope of their business dealings, decisions by some of these firms to change their overall exposure to a given set of risks may simultaneously affect the pricing of many financial instruments.

106. The challenge for financial market authorities and policy makers is to safeguard and reinforce the benefits of greater integration while at the same time minimising the risks of international transmission of market overreactions and other idiosyncratic shocks. Particular attention has been given to areas such as improved financial disclosure, better and more pro-active supervision and regulation, more transparent legal frameworks, including bankruptcy procedures, and improved competition between financial institutions.

107. Requirements for increased transparency on the part of market participants and greater sharing of information among authorities have been core features of these efforts. In the course of the 1990s, wide ranging suggestions for the establishment of an international body with supranational powers over the international financial system were put forward, but found little sympathy with market participants and authorities. Thus, practical steps to reduce contagion in the global financial system have typically taken the form of incremental reforms rather than sweeping solutions.

Lesson: Considerable work remains on the consumer awareness front

It goes without saying that greater awareness on the part of retail consumers and investors in the financial arena is needed.

Increased disclosure alone is not sufficient.

108. Retail consumers/investors remain a weak point. Among the problems they face are adverse selection, the possibility that they will choose an incompetent or dishonest firm for investment or agent for execution of a transaction, and conflicts of interest, the possibility that service providers or agents will put their own interests or those of an affiliate or another customer above those of the client or, worse, engage in fraud.²²

109. Disclosure alone does not resolve all these problems. After all, most regulation only sets minimum standards or requires effective disclosures. Moreover, financial accounting and reporting standards are not fully harmonised. It is up to consumers to utilise the disclosures and other information to attain good value in their product purchases. And while the spread and quality of financial information has improved, not all consumers have the ability to process and evaluate the information that is reported. Disclosure may help to improve the quality of information, but it does

²¹ As well, as a consequence of marking to market, participants may attempt to trim positions rapidly, which can exacerbate negative price dynamics or, where other positions are closed to free up collateral, transmit price shocks to other markets.

²² All financial intermediaries operate on both sides of the savings/investment relationship, using other people's money. Increased conglomeration and globalisation heighten the risk, but the potential for conflicts of interest is in some ways inherent in the process.

not affect the ability of consumers to understand the information that is disclosed. Nor does it address a retail consumer's inability or unwillingness to search for better value and more suitable products and, armed with this information, to switch to providers of the better products.

Lesson: It is not possible to predict the next crisis.

110. Most of the major recommendations to address problems of instability, losses of confidence, and contagion have been by-products of past crises.

IV. Remaining questions

111. Looking at recent history, it has not been so long ago that the increasing complexity of financial products led regulators to move away from more prescriptive modes of oversight toward increased emphasis on proper incentives, with greater reliance on institutions' own assessments and management of risks.

112. But recent events raise questions about possible systemic weaknesses in the regulatory framework or, at least, in its enforcement. They include:

- What are the limits of financial innovation in general and securitisation in particular? How can the adverse consequences of any related changes in the incentive structure be prevented?
- Should regulators intervene voluntarily in order to foster or impede financial innovations? What might be the ramifications of such intervention?
- How can transparency and the valuation of complex innovative products be enhanced, as well as principles and practices for the consolidation of related off-balance-sheet entities?
- What level of conservatism should be built into future prudential regulations over capital and liquidity?
- Which types of institutions should be subject to these requirements?
- Can direct regulation over a limited set of institutions effectively protect the system from distress among the unregulated?
- How should responsibility for different dimensions of financial regulation be allocated, and how centralized or decentralized?
- What institutions should have access to central bank liquidity under what conditions?

Table 1 Factors Causing Financial Distress

Country	Period	Factors Causing Financial Distress
Australia	1989-1991	1989-1991 (poor lending practices and inadequate risk management controls resulted in a number of banks incurring substantial losses, in particular two state government-owned banks – the State Bank of Victoria and the State Bank of South Australia)
Czech Republic	1990s 2 nd half	chronic problems with the quality of loan portfolios of many banks, owing mainly to the heritage of the centrally planned economy, delayed restructuring of the corporate sector, poor lending practices of banks, abuses of legal loopholes, moral hazard and fraud
Finland	1991-1994	poor lending practices in the wake of financial sector deregulation, excessive risk taking at Skopbank and in the savings bank sector. Overheated real estate and asset prices. The private sector debt problems, combined with a strongly depreciating currency and the collapse of exports to the former Soviet Union, deepened the recession.
France	1994-1995	poor lending practices at Crédit Lyonnais, then the largest bank, led to over-concentration in real estate loans and loans on speculative industrial and commercial projects
Hong Kong	1983-1986	over-exposure to the real estate sector with relatively loose institutional supervision, compounded by political uncertainties
Hungary	1990s	combination of structural, institutional and macro-economic factors and weaknesses in asset classification and internal risk management of banks; solvency problems in the early to mid-1990s. Liquidity and solvency problems in 1997 with the second largest retail bank— <i>Postabank</i> . The problem was localised and no systemic crisis emerged.
Italy	1970s-1980s	(problems in the special credit sector, owing mainly to an excessive sectoral and geographical concentration of lending; episodes of bankruptcy involving fraud); (crises of small and medium-sized savings banks and co-operative banks, attributable mainly to poor lending practices and mismanagement);
	1990s	(crises of publicly owned medium-sized and large southern banks, due to increased competition, adverse macroeconomic conditions and poor lending practices; crises of small and medium-sized banks, attributable to the same factors)
Japan	1990s	major financial disruption in 1997-98 caused in part by poor lending practices and overly close ties to industrial groups, which allowed for an over-exposure to real estate and equities and led to massive non-performing loan problems as asset prices plummeted with the collapse of the “bubble” economy
Korea	1997-2000	over-borrowing and over-investment by the corporate sector, imprudent lending by financial institutions funded by short-term borrowings in international markets, lack of transparency in accounting and risk management of corporations and financial institutions

Country	Period	Factors Causing Financial Distress
Mexico	1994-2000	poor lending practices and risk management practices at banks in the wake of rapid privatisation and financial liberalisation measures, with weak supervisory capacity, combined with a macroeconomic crisis
New Zealand	1987-1990	combination of microeconomic and system related factors: rapid financial sector liberalisation changed risk dynamics in the economy, but banks had under-developed risk management practices and poor lending practices
Norway	1987-1993	increase of debt and over-investment in the private sector during the years 1984-1986, combined with banks competing for market shares in the wake of financial deregulation, and negative real interest after tax are widely seen as the major explanation of the later downturn and the banking crisis
Poland	early 1990s, mostly in 1993-1994	(financial distress took the form of a severe surge in classified loans. Reasons behind this problem were quite complex, combining macroeconomic, microeconomic and systemic elements. Basically, the problems originated in the transformation from the central planning to market economy. Among the most significant reasons can be found the following: 1) tight budgetary constraints of enterprises, 2) the government restraining from subsidising state-owned companies, 3) transformation recession and high inflation, “freed” interest rates (indebtedness pitfall), 4) poor lending practices, 5) lack of expertise and awareness of risk management role in banks, 6) lack of experience to operate in market economy by banks and their clients, as well as 7) weak regulatory framework and supervisory capacities)
Slovakia	1991-1993	poor lending practices, connected lending and other inadequacies dating back to the pre-transition era resulted in wide-spread solvency and liquidity problems
Spain	1977-1985	Macro effect of oil price increases compounded by new entrants, poor lending practices, limited supervision enforcement capacity and resources, and inadequate legal framework
Sweden	1991-1994	poor lending practices in the wake of liberalised domestic credit restrictions, high inflation and generous deductions on loan interest payments, combined with a deep recession and sharp fall in real estate prices, as well as inadequate supervision

Country	Period	Factors Causing Financial Distress
Turkey	2000-2001	<p>A combination of various factors such as continued macroeconomic instability, severe external shocks and the unfavourable financial condition of a sizeable segment of the banking system; sharp increases in funding costs due to an increase in interest rates and maturity mismatch, capital losses due to a sharp mark-to-market decline in the value of government securities holdings, and due to a sharp change in foreign exchange rate and open foreign currency positions, as well as poor lending and risk management practices contributed to the start of two crises – the first in November 2000 and the second in February 2001.</p> <ul style="list-style-type: none"> • November 2000: liquidity crisis—overnight interest rates climbed above 2.000% p.a. caused by increased market scepticism about the ongoing fiscal and monetary program and were triggered by the need of a medium-sized private bank to refinance an excessive stock of government securities. • February 2001: Against the background of increased political uncertainty and weakening of economic fundamentals, investors liquidated TL positions and fled to the US dollar. Interest rates spiked as high as 6.200% p.a., with a rapid depletion of the Central Bank of the Republic of Turkey’s foreign exchange reserves. The crawling-peg exchange rate regime was abandoned and the Turkish government floated the Lira. Since February 2001 crisis, 8 banks were intervened by the Banking Regulation and Supervision Agency (BRSA), bringing to 19 the total number of banks that have been transferred to the Savings Deposit Insurance Fund (SDIF) during the past 5 years.
United States	1984-1991	Economic, legislative and regulatory factors on a national level; regional and sectoral recessions, and excessive risk taking by financial institutions.
	2007-	Defaults on subprime residential mortgage loans triggered a collapse in ratings on related structured products, heightening uncertainties about the valuation and location of risks in the financial system, leading to a drying up of liquidity in numerous market segments and a crisis of confidence, eventually precipitating the failures of a number of large intermediaries and a worldwide financial panic

Sources: Central Banks, Finance Ministries, and/or Bank Supervisory agencies, Secretariat

Table 2:
Pre-Crisis Resolution Options

Panel A

<i>Pre-Crisis Resolution Options</i>	COUNTRY								
	Australia	Czech Rep.	Finland	France	Hong Kong, China	Hungary	Italy	Japan	Korea
Deposit Insurance Scheme	No	No	Yes	Yes	No	No	Yes	Yes	Yes
Crisis Resolution Procedures	No	No	No	No	No	No	No	No	No
Financial Assistance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Consolidation	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Govt. Acquisition or Control	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Liquidation	Yes	Yes	No	Yes	Yes ¹	Yes	Yes	No	No

1. Liquidation was possible from a technical or legal perspective but was not considered to be a viable option.

Sources: Central Banks, Finance Ministries, and/or Bank Supervisory agencies

Table 2 (cont.)

Pre-Crisis Resolution Options

Panel B

<i>Pre-Crisis Resolution Options</i>	COUNTRY									
	Mexico	New Zealand	Norway	Poland	Slovakia	Spain	Sweden	Turkey	USA 1984-91	USA 2007-
Deposit Insurance Scheme	No	No	Yes	Yes	No	No	No	Yes	Yes	Yes
Crisis Resolution Procedures	No	No	No	No	No	No	No	No	No	No
Financial Assistance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes ¹	Yes	Yes
Consolidation	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes
Govt. Acquisition or Control	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Liquidation	Yes ²	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes

1. "Although the existence of "open bank assistance" is backed by the Article 40/II/d of the Act Nr: 1211, which involves the banks under close monitoring according to Article 14 of the Bank's Act Nr: 4389, the provision of this Article was not executed during the crises experienced in the years 2000 and 2001 despite its availability and the aforementioned Article was amended as of April 25th, 2001, containing a similar provision as to be executed only for the banks with liquidity problems."

2. Liquidation was possible, but procedures were lengthy and too cumbersome to make this a viable option.

Sources: Central Banks, Finance Ministries, and/or Bank Supervisory agencies, Secretariat

Table 3
Financial Restructuring Methods

Panel A

<i>Financial Restructuring Methods</i>	COUNTRY								
	Australia	Czech Rep.	Finland	France	Hong Kong, China	Hungary	Italy	Japan	Korea
Forbearance	No	No	No	Yes	No	Yes	Yes	Yes	Yes
Capital Injection	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Govt. Acquisition	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Guarantees	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Liability Measures	No	No	No	No	No	Yes	No	No	No
Debtor Relief	No	No	No	No	No	No	No	No	Yes
Tax Concessions	No	No	No	No	No	No	No	No	Yes
Liquidity support	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Other central bank or govt. support	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes

Sources: Central Banks, Finance Ministries, and/or Bank Supervisory agencies

Table 3 continued

Financial Restructuring Methods

Panel B

<i>Financial Restructuring Methods</i>	COUNTRY									
	Mexico	New Zealand	Norway	Poland	Slovakia	Spain	Sweden	Turkey	USA 1984-91	USA 2007-
Forbearance	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes	Yes
Capital Injection	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Govt. Acquisition	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Guarantees	Yes	No	No	No	Yes	Yes	Yes	Yes	No	Yes
Liability Measures	No	No	No	No	No	No	No	No	Yes	Yes
Debtor Relief	Yes	No	No	Yes	No	No	No	Yes	No	Yes
Tax Concessions	No	No	No	No	No	No	No	No	Yes	Yes
Liquidity support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other central bank or govt. support	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sources: Central Banks, Finance Ministries, and/or Bank Supervisory agencies, Secretariat

Table 4

Operational Restructuring Methods

Panel A

<i>Operational Restructuring Methods</i>	COUNTRY								
	Australia	Czech Rep.	Finland	France	Hong Kong, China	Hungary	Italy	Japan	Korea
Consolidation:									
• Domestic merger	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
• Foreign partner/Takeover	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Liquidation	No	Yes	No	No	No	Yes	Yes	Yes	Yes
Asset Disposition Procedures									
• Good bank/bad bank	Yes	No	No	No	No	No	Yes	No	Yes
• Loan hospital	No	No	No	No	No	Yes	No	No	No
• Asset management company	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes
• Debt-Equity swap	Yes	No	No	No	No	Yes	No	Yes	No
Memo: Fiscal costs as % of GDP	1,5 (1990-91)	14 (as of 2000)	14,7 (1995)	0,7	0,3	10-12	0,5 (1990-96)	20	42 ¹

1. total amount injected is about 81 trillion won; the financial cost was estimated at about 42% of injected funds as of mid-2000.

Sources: Central Banks, Finance Ministries, and/or Bank Supervisory agencies

Table 4 continued

Operational Restructuring Methods

Panel B

<i>Operational Restructuring Methods</i>	COUNTRY									
	Mexico	New Zealand	Norway	Poland	Slovakia	Spain	Sweden	Turkey	USA 1984-91	USA 2007-
Consolidation:										
• Domestic merger	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Foreign partner/Takeover	Yes	No	No	Yes	Yes	No	No	Yes	No	No
Liquidation	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Asset Disposition Procedures										
• Good bank/bad bank	No	No	No	No	No	No	Yes	No	No	No
• Loan hospital	Yes	No	No	Yes	No	No	Yes	No	No	No
• Asset management company	Yes	No	No	No	Yes	Yes	Yes	No	Yes	Yes
• Debt-Equity swap	No	No	No	No	No	No	No	No	No	Yes
Memo: Fiscal costs as a % of GDP	19,3	1,0	2,6	8,2	10-12	5-6	4,5	n.a.	< 3	?

Sources: Central Banks, Finance Ministries, and/or Bank Supervisory agencies, Secretariat