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ΤΙΤΛΟΣ ΔΙΑΤΡΙΒΗΣ: Central Bank involvement in Financial Crises

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Abstract

The current financial crisis, which has lasted well more than two years, is without any doubt the “champion” due to its wide spread and unprecedented effects. Between the ongoing crisis and those of the past there are factors that are common and there are some that are new. This time, a number of deficiencies in financial regulation and architecture have come to light, in terms of systemically important financial institutions, the evaluation of systemic risks and vulnerabilities, and the resolution of financial distress. The global nature of the crisis indicates that financially integrated markets offer a number of benefits to economic growth but, unfortunately, can also pose significant risks, with enormous real economic consequences. Thus, there is a need and at the same time a unique opportunity for the global financial system to adopt the necessary reforms. Baring in mind the past experiences, one thing is certain: Absolute answers and easy solutions exist only in our imagination.

Keywords: Financial crises, regulation and supervision, subprime lending, international financial architecture, contagion, resolution.

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Introduction

The ongoing financial crisis, which erupted during the summer 2007, constitutes unambiguously an unprecedented challenge for the economic and political world alike.

This essay in the first part presents the historical background of crises and continues with the relative literature on the nature of financial intermediation in order to help the reader to get in terms with the mechanics of the financial systems' environment.

In the second part we review the causes and policy actions for four financial crises, namely, the 1994 – 1995 crisis in Mexico, the Nordic banking crises of the early 1990s, the crises that occurred in the Asian countries during 1997 – 1998, and finally the current crisis that started in the U.S. with the bust of the subprime loans. In our analysis apart from the evidence we use a very simple but at the same time a very helpful and analytical tool which illustrates the interconnections of the economic environment thus explaining the channels through which a crisis evolves.

The last part of the essay concludes showing several common features but also differences or new dimensions that the current crisis resembles with past crises and provides lessons focusing on the impact of financial globalization on financial fragility, regulation and supervision of the financial system, and reforms of the international financial architecture.

CHAPTER 1

INTRODUCTION TO BANKING AND FINANCIAL FRAGILITY

A historical overview

This analysis introduces a comprehensive new historical database for studying international debt and banking crises, inflation, currency crashes and debasements. With a few notable exceptions, cross-country empirical studies on financial crises typically begin in 1980 and are limited in several other important aspects. Yet an event that is rare in a three-decade span may not be all that rare when based in broader context.

Some basic insights one gains from this panoramic view of the history of financial crises: first, is that for the world as a whole the current period can be seen as a typical lull that follows large global financial crises. Aside from the current lull, we must note the long periods where a high percentage of all countries are in a state of default or restructuring. Indeed there are five pronounced peaks or default cycles. The first is during the Napoleonic War, the second runs from the 1820s through the late 1840s, the third episode begins in the early 1870s and lasts for two decades. The fourth episode begins in the Great Depression of the 1930s and extends through the early 1950s. The most recent default cycle encompasses the emerging market debt crises of the 1980s and 1990s.

Looking forward, one cannot fail to note that whereas one and two decade lulls in defaults are not at all uncommon, each lull has invariably been followed by a new wave of default. Individual country experiences indicate that serial default on external debt is the norm throughout every region in the world, even including Asia and Europe. Our extensive new dataset also confirms the prevailing view among economists that global economic factors, including commodity prices and centre country interest rates, play a major role in precipitating sovereign debt crises.

Also consonant with the modern theory of crises is the striking correlation between financial liberalization and the incident of banking crises. Periods of high international capital mobility have repeatedly produced international banking crises, not only famously as they did in the 1990s, but historically. Moreover, our database includes long time series on domestic public debt. Because historical data on domestic debt is so difficult to come by, it has been ignored in the empirical studies on debt and inflation in developing countries. Indeed, many generally knowledgeable observers have argued that the recent shift by many emerging market governments from external to domestic bond issues is revolutionary and unprecedented. Nothing could be further from the truth, with implications for today's markets and for historical analyses of debt and inflation.

The topic of domestic debt is so important, and the implications for existing empirical studies on inflation and external default are so profound. Here, we focus on a few major points. The first is that contrary to much contemporary opinion, domestic debt constituted an important part of government debt in most countries, including emerging markets, over most of their existence. Furthermore, contrary to the received wisdom, the data reveal that a very important share of domestic debt – even in emerging markets – was long-term maturity.

As payments on domestic debt must come from the same revenue stream as payments on foreign debt, Reinhart and Rogoff (2008) find that in periods of high inflation the governments gain to high unexpected inflation often derives at least as much from capital losses that are inflicted on holders of long-term government bonds. Since World War II, inflation and default have gone hand-in-hand.

The forgotten history of domestic debt has important lessons for the present. Most investment banks, not to mention official bodies such as the IMF and the World Bank, have argued that even though total public debt remains quite high today in many emerging markets, the risk of default on external debt has dropped dramatically, especially as the share of external debt has fallen. The historical record, however, suggests that a high ratio of domestic to external debt in overall public debt is cold comfort to external debt holders.

To summarize, many investors appear to be justifying still relatively low external debt credit spreads because “This time is different” and emerging market governments are now relying more on domestic public debt. If so, they are deeply mistaken. Another noteworthy insight from the “panoramic view” is that the median duration of default spells in the post-World War II period is one-half the length of what it was during 1800 – 1945.

Virtually all countries have defaulted at least once and many several times on external debt during their emerging market economy phase, a period that typically takes at least one or two centuries. Today’s emerging markets can hardly claim credit for inventing serial default. Between 1300 and 1799 a number of now rich European countries had similar problems when they were “emerging markets”.

Starting in the 19th century, the combination of the development of international capital markets together with the emergence of a number of new nation states, led to an explosion in international defaults including debt rescheduling, which the international finance theory literature rightly categorizes as negotiated partial defaults.

In the 20th century country defaults tend to come in clusters, including especially the period of the Great Depression, when much of the world went into default, the 1980s and

1990s debt crisis. The latter crisis saw somewhat fewer technical defaults thanks to massive intervention by the official community, particularly by the IMF and the World Bank.

The number of defaults is not the only measure we need to take into account. Default episodes can be connected, particularly if debt restructuring terms are harsh and make relapse into default almost inevitable. However, to gain further perspective into countries' default histories, we need to look at the number of years each country has spent in default since independence. It is notable that, while there are many defaults in Asia, the typical default was resolved relatively quickly. Africa's record is much worse, with several countries spending roughly half their time in default. Certainly, one main reason why African defaults are less celebrated than, say, Latin American defaults, is because the debts of African countries have typically been relatively small, and the systemic consequences less. In Europe, Greece spent more than half the years since 1800 in default and a number of Latin American countries spent roughly 40% of their years in default.

Overall, one can see that default episodes, while recurrent, are far from continuous. This wide spacing no doubt reflects adjustments debtors and creditors make in the wake of each default cycle.

As Kaminsky, Reinhart and Vegh (2004) have demonstrated for the post-war period, emerging market borrowing tends to be extremely pro-cyclical. Favorable trends in countries' terms of trade (meaning typically, high prices for primary commodities) typically lead to a ramp-up of borrowing that collapses into defaults when prices drop.

Defaults are also quite sensitive to the global capital flow cycle. When flows drop precipitously, more countries slip into default. The problem is that crisis-prone countries, particularly serial defaulters, tend to over-borrow in good times, leaving them vulnerable during the inevitable downturns. The pervasive view that "this time is different" is precisely why it usually is not different, and catastrophe eventually strikes again.

We must not ignore the magnitude of the international transmission channel that is responsible for some of the common shocks that sparked the commodity and capital flow cycles leading to major global defaults in the 1820s, the 1870s, the 1930s and the 1980s.

If serial default is the norm for a country passing through the emerging market state of development, then the tendency to lapse into periods of high and extremely high inflation is an even more striking common denominator. No emerging market country in history, has managed to escape bouts of high inflation. However spectacular some of the coinage debasements that occurred in the economic history, there is no question that the advent of

the printing press brought inflation up to a whole new level. Of course, the problems of external default, domestic default and inflation are all integrally related.

As with debt defaults, the last few years have been a relatively quiescent period in terms of very high inflation, although many countries still have very high inflation. Many observers, following the same logic as in commenting on external default, have concluded that “this time is different”. Perhaps, but, as with debt defaults, experience suggests that quiet periods do not extend indefinitely.

Having discussed currency debasement and inflation crises, including at this late stage a long expose on exchange rate crashes seems somewhat redundant. Inflation crises and exchange rate crises travel hand-in-hand in the overwhelming majority of episodes across time and countries (with a markedly tighter link in chronic-inflation countries).

This “panoramic” quantitative overview has revealed a number of important facts. First and foremost, we illustrate the near universality of episodes of serial default and high inflation in emerging markets, extending to Asia, Africa, and until not so long ago, Europe. Global debt crises have often radiated from the center through commodity prices, capital flows, interest rates, and shocks to investor confidence. The popular notion that today’s emerging markets are breaking new ground in their extensive reliance on domestic debt markets is hardly new.

This brings us to our central theme – the “this time is different syndrome”. Indeed, an often cited reason these days why “this time is different” for the emerging markets is that governments there are relying more on domestic debt financing.

Such celebration may be premature. Capital flow/default cycles have been around since at least 1800 if not before. Technology has changed, the height of humans has changed, and fashions have changed. Yet the ability of governments and investors to delude themselves, giving rise to periodic bouts of euphoria that usually end in tears, seems to have remained constant. On a more positive note, our paper at least raises the question of how a country might “graduate” from a history of serial default.

If history tells us anything, it is that we cannot jump to “this time is different” conclusions. In particular, concluding that countries like Hungary and Greece will never default again because “this time is different due to the European Union” may prove a very short-liver truism.

Financial structure

The financial system is complex in structure and function throughout the world. It includes many different types of institutions: banks, insurance companies, mutual funds, stock and bond markets, and so on – all regulated by government. The main operation of the financial system is to channel funds from savers to people with productive investment opportunities. There are eight basic elements in the structure of the financial system that we need to explain in order to understand how it works:

1. Stocks are not the most important source of external financing for businesses
2. Issuing marketable debt and equity securities is not the primary way in which businesses finance their operations
3. Indirect finance, which involves the activities of financial intermediaries, is many times more important than direct finance, in which businesses raise funds directly from lenders in financial markets
4. Financial intermediaries, particularly banks, are the most important source of external funding to businesses
5. The financial system is among the most heavily regulated sectors of the economy
6. Only large, well-established corporations have easy access to securities markets to finance their activities
7. Collateral is a prevalent feature of debt contracts for households and businesses alike
8. Debt contracts typically are extremely complicated legal documents that place substantial restrictions on the behavior of the borrower

A major problem in financial markets is transaction costs. Fortunately, financial intermediaries have evolved to reduce transaction costs and allow small savers and borrowers to benefit from the existence of financial markets.

One solution to the problem of transaction costs is to bundle the funds of many investors together in order to take advantage of economies of scale. The presence of economies of scale in financial markets helps explain the reasons behind the development of financial intermediaries and why they have become such an important part of our financial system.

Financial intermediaries are also better able to develop expertise to lower transaction costs. An important outcome of financial intermediaries' low transaction costs

is the ability to provide its customers with liquidity services that make it easier for customers to conduct transactions.

To understand financial structure more fully, however, we need to examine the role of information in financial markets. Asymmetric information is an important aspect of financial markets. Adverse selection is an asymmetric information problem that occurs before the transaction: potential bad credit risks are the ones who mostly seek out loans. Moral hazard arises after the transaction occurs: the lender runs the risk that the borrower will engage in activities that are undesirable from his point of view and minimize the chance of repaying the loan. The analysis of how asymmetric information problems affect economic behavior is called agency theory.

A particular aspect of the way the adverse selection problem interferes with the efficient functioning of a market was outlined in a famous article by Nobel Prize winner George Akerlof (1970) and is called the “lemons problem”. A lemons problem arises in securities markets – that is, the debt (bond) and equity (stock) markets. That is the reason why the marketable securities are not the primary source of financing for businesses. It also partly explains why stocks are not the most important source of financing for businesses.

In the absence of asymmetric information, the lemons problem disappears. The solution to the adverse selection problem in financial markets is to eliminate asymmetric information by furnishing the people supplying funds with full details about those seeking to finance their investment activities. One way in achieving this is through private companies which collect and produce information that distinguish good from bad firms.

However, the system of private production and sale of information does not completely solve the adverse selection problem in securities markets because of the free-rider problem which occurs when people take advantage of information that others have paid for. The free-rider problem prevents market from producing enough information to eliminate all the asymmetric information that leads to adverse selection.

Governments should regulate securities markets so to encourage firms to reveal honest information that will help investors to determine their value. However, disclosure requirements do not always work well, as the collapse of Enron and Parmalat show.

The asymmetric information problem of adverse selection in financial markets helps explain why financial markets are among the most heavily regulated sectors in the economy. Government regulation is needed to reduce the problem, which interferes with the efficient functioning of securities markets. Nevertheless, government regulation does not eliminate the problem.

A financial intermediary, such as a bank, becomes expert in producing information about firms, so that it can sort out good credit risks from bad ones. An important element in the banks' ability to profit from the information it produces is that it avoids the free-rider problem by primarily making private loans rather than by purchasing securities that are traded in the open market. That is why indirect finance is so much more important than direct finance and why banks are the most important source of external funds for businesses. Another important fact that is explained by the analysis here is the greater importance of banks in the financial systems of developing countries.

Our adverse selection analysis thus suggests that there should be a pecking order for firms that can issue securities. Hence, the larger and more established a corporation is, the more likely it will be to issue securities to raise funds.

Adverse selection becomes a problem in the functioning of financial markets only if the borrower is unable to repay the loan. Collateral (property promised to the lender in case the borrower defaults) and net worth or equity capital (the difference between the firm's assets and its liabilities) reduce the consequences of adverse selection.

Another problem that affects the operation of financial markets is moral hazard. It has important consequences for whether a firm finds it easier to raise funds with debt than with equity contracts. Equity contracts are subject to a particular type of moral hazard called the principal-agent problem which arises from the separation of ownership and control in managing firms. The principal-agent problem would not arise if the owners of a firm had complete information about what the managers were up to and could prevent wasteful expenditures or fraud.

One way for stockholders to reduce the moral hazard problem is to engage in the monitoring of the firm's activities. But as with adverse selection, the free-rider problem decreases the amount of information production that would reduce the moral hazard (principal-agent) problem.

The government has an incentive to try to reduce the moral hazard problem, which provides another reason why the financial system is so heavily regulated. However, these measures can be partly effective.

Financial intermediaries have the ability to avoid the free-rider problem with the use of a venture capital firm.

Moral hazard arises with an equity contract. On the other hand, a debt contract has exactly the attributes to rectify the problem because it is a contractual agreement by the borrower to pay the lender a fixed amount at periodic intervals. The concept of moral

hazard thus helps explain why stocks are the most important source of financing for businesses.

Unfortunately, even with the advantages just described, debt contracts are still subject to moral hazard since the borrowers have an incentive to take on projects that riskier than lenders would like.

When borrowers have more at stake because their collateral or their net worth is high, the risk of moral hazard is greatly reduced.

Another way directed to reduce moral hazard is writing provisions (restrictive covenants) into the debt contracts that restrict the firm's activities. There are four types of restrictive covenants that achieve this objective: 1) covenants to discourage undesirable behavior, 2) covenants to encourage desirable behavior, 3) covenants to keep collateral valuable, and 4) covenants to provide information.

Although restrictive covenants help reduce the moral hazard problem, they do not eliminate it completely. Because monitoring and enforcement of restrictive covenants are costly, the free-rider problem arises. As we have seen before, financial intermediaries and in particular banks, have the ability to avoid the free-rider problem as long as they make private loans.

Current issues

Banks are deposit-taking institutes (DTIs) and they play a major role in a country's economy as their deposit liabilities form a major role in a country's money supply and are therefore very relevant to governments and Central banks for the transmission of the monetary policy.

It is said that bank deposits "create" money. Banks keep a fraction of the money that is deposited by the public as reserves and lend the rest. A percentage of the loans are then used as deposits by the borrowers. Taking into account that there are linkages from the system because money flows abroad, people hold money as cash or buy government bonds should not deter us from the logic that bank deposits "create" money.

The monetary function of bank deposits is often seen as one of the main reasons why deposit-taking institutions (DTIs) are subject to heavier regulation and supervision than non-deposit-taking institutions (NDTIs) such as insurance companies, pension funds, investment companies, finance houses etc.

One other feature that distinguishes DTIs from NDTIs lies in the nature of financial contracts. Deposit holding are said to be discretionary in the sense that savers can make discretionary decisions concerning how much money to hold and for how long. On the other hand, holding assets from the NDTIs requires a contract, which specifies the amount and frequency of the flow of funds. Therefore the flow of funds is described as contractual.

Modern banks offer a wide range of financial services including payment services, deposit and lending services, investments, pensions and insurance services and e-banking.

An important service offered by banks is that they offer facilities that enable customers to make payments that reflect a variety of transactions. Different types of cashless payments include: cheques, credit transfers, standing orders, direct debits, credit and debit cards, cheques guarantee cards, travel and entertainment cards, smart and memory or chip cards.

In addition to payment services personal banking includes the offer of a broad range of deposit and lending services. These are summarized as follows: current or checking accounts, time or savings deposits, consumer loans and mortgages. Many banks have diversified into a broader range of areas offering a “one-stop” facility to meet all retail customers’ financial needs. This includes the offer of an extensive array of investment products, pensions, insurance and other services including financial advisory services, safe keeping facilities and foreign exchange services.

In recent years, a number of innovative financial products have been developed, taking advantage of rapid technological progress and financial market development. Transactions made using these innovative products are accounting for an increasing proportion of the volume and value of domestic and cross-border retail payments. We can refer to two categories of payment products:

- ❑ E-money includes reloadable electronic money instruments in the form of stored value cards and electronic tokens stored in computer memory
- ❑ Remote payments are payment instruments that allow remote access to a customer’s account.

Over the last twenty years many changes have occurred in the banking sector of the most advanced economies. The main forces that generate change in the banking industry are deregulation and re-regulation processes, competitive pressures, financial innovation and technological change. The main trends resulting from these forces of change are conglomeration and globalization.

Financial deregulation consists of removing controls and rules that in the past have protected financial institutions and especially banks. Structural deregulation refers to the opening up of financial markets to allow institutions to compete more freely. We can identify three joint effects of deregulation and technology. First, the loosening of banking laws coupled with the advantages of technology (in terms of potential economies of scale and other efficiencies) has encouraged the consolidation process. As a result the number of banks has shrunk everywhere. Second, the introduction of new technologies in a deregulated context intensified competition and improved banks' ability to adjust prices and terms of financial products. Finally, the barriers between bank and non-bank financial institutions disappeared allowing the rise of universal banking activity.

Re-regulation is defined as the process of implementing new rules, restrictions and controls in response to market participants' effort to circumvent existing regulations. It can be viewed also as a response to minimize any potential adverse effects associated with excessive competition brought through structural deregulation. Another result of deregulation and liberalization of the banking sector is increased competitive pressures on banks.

Financial innovation can be defined as the act of creating and then popularizing new financial instruments, technologies, institutions and markets.

Banks' main responses to the abovementioned forces of change come through the conglomeration process (mergers and acquisitions) and the processes of internationalization and globalization.

The most common motives for M&As include economies of scale, economies of scope, eliminating inefficiencies, increasing market power and diversification of product lines.

Consolidation in the global banking industry has resulted in the emergence of financial conglomerates that conduct an extensive range of businesses with a group structure.

Globalization can be defined as the evolution of markets and institutions such that geographic boundaries do not limit financial transactions. It is obvious that there are economic, political and cultural aspects of globalization.

Other important responses to the forces of change are disintermediation (the process whereby economic units bypass banks in order to invest their funds directly in the financial markets), growth in off-balance-sheet activities and particularly derivative products and

securitization which refers to the process whereby loans and other financial assets (e.g. mortgages) are pooled together for sale as securities to investors.

The future of banking will likely be shaped in large part by the environment (regulatory, technological and competitive) in which it operates. Even if banks remain nationally based they will be subject to international market developments and national tendencies will increasingly be influenced by international developments. Hence new regulatory structures will likely be necessary as banks become bigger in size and more exposed to risks originating from abroad, as well as risks to global financial activities.

Banking regulation

The financial system is among the most heavily regulated sectors of the economy, and banks are among the most heavily regulated of financial institutions. Unfortunately, the regulatory process may not always work well, as evidenced by the recent and past crises. Thus, we will use economic analysis in order to consider how the regulatory system can be reformed to prevent future disasters.

The solution banks provide to the free-rider problem creates another asymmetric information problem, because depositors lack information about the quality of private loans. Unable to obtain this information, depositors would be reluctant to put money in the bank, thus making banking institutions less viable. Moreover, depositors' lack of information about the quality of bank assets can lead to bank panics, which can have serious consequences for the economy. Uncertainty about the health of the banking system can lead to runs on banks irrespectively if they are good or bad, and the failure of one bank can hasten the failure of others (contagion effect).

A government safety net for depositors can short-circuit run on banks and thus overcome the reluctance to put money in the banking system. One form of the safety net is deposit insurance. Nevertheless, even in the absence of explicit deposit insurance, governments have often stood ready to provide support to domestic banks or other financial intermediaries, deemed too big to fail, facing runs. Governments provide support through lending from the central bank to troubled institutions. This form of support is often referred to as the "lender of last resort" role of the central bank. In other cases, funds are provided directly to troubled institutions. Governments can also take over (nationalize) banks and guarantee that all creditors will be fully repaid.

The most serious drawback of the government safety net stems from moral hazard since it poses an important concern in insurance arrangements by giving incentives for risk taking that might result in an insurance payoff. Another concern is that with the implementation of the safety net depositors and creditors do not impose market discipline on banks and financial institutions by withdrawing funds when they suspect that too much risk is taken. Consequently, for financial institutions is a “heads I win, tails someone else loses” case.

A further problem arises because of adverse selection since the people who are most likely to produce the adverse outcome insured against bank failure are those who most want to take advantage of the insurance.

The moral hazard created by a government safety net and the desire to prevent financial institutions failures have presented regulators with a particular quandary. Because the failure of a very large financial institution increases the chances of a major financial disruption, regulators are naturally reluctant to allow a big institution to fail and cause losses to its depositors and creditors.

One problem with the too-big-to-fail policy is that it increases the moral hazard incentives for big banks. Similarly, it increases the same incentives for nonbank financial institutions that are extended a government safety net.

As financial innovation advances financial consolidation has been proceeding at a rapid pace, leading to both larger and more complex financial organizations. Financial consolidation poses two challenges to financial regulation because of the existence of the government safety net. First, the increased size of financial institutions increases the too-big-to-fail problem. Second, financial consolidation of banks with other financial services firms means that the government safety net may be extended to new activities such as securities underwriting, insurance, or real estate activities. This increases incentives for greater risk taking in these activities that can also weaken the fabric of the financial system. Limiting the moral hazard incentives for the larger, more complex financial institutions will be one of the key issues facing banking regulators in the aftermath of the subprime financial crisis.

Another way for bank regulators trying to provide solutions for the moral hazard problem associated with the government safety net involve restrictions on asset holdings. Unfortunately, those restrictions can cost the taxpayers dearly. Government-imposed capital requirements can also help minimize moral hazard at financial institutions. Capital requirements for banks can take two forms. The first type is based on the leverage ratio, the

amount of capital divided by the bank's total assets. The Basel Committee on Banking Supervision which has implemented the Basel Accord deals with the second type of capital requirements, risk-based capital requirements. Regulators have become increasingly worried about the off-balance-sheet activities. Unfortunately, over time, limitations of the Basel Accord have become apparent, because the regulatory measure of bank risk as stipulated by the risk weights can differ substantially from the actual risk the bank faces. It is increasingly likely that the Basel Committee will have an even greater role in exploring capital requirements for a wider range of financial institutions in the future.

If the amount of a financial institution's capital falls to low levels the moral hazard problem becomes more severe, making it more likely that the institution will fail and the taxpayer will be left holding the bag. To prevent this, the Federal Deposit Insurance Corporation Improvement Act of 1991 adopted prompted corrective action provisions that require the FDIC to intervene earlier and more vigorously when a bank gets into trouble.

Overseeing who operates financial institutions and how they are operated, referred to as financial supervision or prudential supervision, is an important method for reducing adverse selection and moral hazard in the financial industry. Chartering financial institutions is one method for preventing this adverse selection problem. Regular on-site examinations also function to limit moral hazard. Note that the methods regulators use to cope with adverse selection and moral hazard have their counterparts in private financial markets.

Traditional on-site examinations is no longer felt to be adequate since financial innovation has produced markets and instruments that make it easy for financial institutions and their employees to make huge bets easily and quickly (the fall of Barings, 1995).

This change in the environment has resulted in a major shift in the thinking about the prudential supervisory process with regard to controlling risk throughout the world. Four elements of sound risk management are assessed to come up with the risk management rating: 1) the quality of oversight provided by the board of directors and senior management, 2) the adequacy of policies and limits for all activities that present significant risks, 3) the quality of the risk measurement and monitoring systems, 4) the adequacy of internal controls to prevent fraud or unauthorized activities on the part of employees.

The shift toward focusing on management processes is also reflected in recent guidelines adopted by bank regulatory authorities to deal with interest-rate risk. Particularly

important is the implementation of stress testing, which calculates losses under dire scenarios, or value-at-risk (VaR) calculations.

The free-rider problem indicates that individual depositors and creditors do not have enough incentive to produce private information about the quality of a financial institution's assets. Therefore, disclosure requirements are a key element of financial regulation. Increased disclosure is needed to limit incentives to take on excessive risk and to improve the quality of information in the marketplace so that investors can make informed decisions, thereby improving the ability of financial markets to allocate capital to its most productive uses. We must note that as the subprime financial crisis revealed, the move to so-called mark-to-market accounting or fair-value accounting in which assets are valued in the balance sheet at what they could sell for in the market, is particularly controversial.

The existence of asymmetric information also suggests that consumers may not have enough information to protect themselves fully. The recent crisis has illustrated the need for greater consumer protection.

Increased competition can also increase moral hazard incentives for financial institutions to take on more risk. Thus, governments in many countries have instituted regulations to protect financial institutions from competition. Although restricting competition propped up the health of banks, it led to higher charges to consumers and decreased the efficiency of banking institutions. Consequently, in recent years, the impulse of governments in industrialized countries to restrict competition has been fading.

Asymmetric information analysis explains what types of financial regulations are needed to reduce moral hazard and adverse selection problems in the financial system. However, understanding the theory behind regulation does not mean that regulation and supervision of the financial system are easy in practice.

Why banks are so special – How financial intermediation works

To understand how banks work, it is necessary to understand the role of financial intermediaries in an economy. Financial intermediaries and financial markets' main role is to provide a mechanism by which funds are transferred and allocated to their most productive opportunities. A bank is a financial intermediary whose core activity is to provide loans to deficit units (borrowers) and to collect deposits from surplus units (savers). But why savers and borrowers need banks and do not engage in direct financing?

Two types of barriers can be identified in direct financing: 1) the difficulty and expense of matching the complex needs of individual borrowers and lenders 2) the incompatibility of the financial needs of borrowers and lenders. The latter want their assets for short periods of time and with the highest possible return. In contrast borrowers demand cheap liabilities for long periods.

To fully understand the advantages of the intermediation process, we need to analyze what banks do and how they do it. Deposits are small-size, low-risk and high-liquidity. Loans are of larger size, higher risk and illiquid. Banks bridge the gap between the needs of lenders and borrowers by performing a transformation function, which can be broke down to size, maturity and risk transformation. Size transformation is performed by banks' exploiting economies of scale since they have access to a larger number of depositors than any individual borrower. Maturity transformation is achieved by transforming funds lent for a short period of time into medium and long-term loans. Finally risk transformation is performed by diversification of banks' investments, pooling risks, screening and monitoring borrowers and holding capital and reserves as a buffer for unexpected losses.

Financial intermediaries help minimize the costs associated with direct lending i.e. transaction costs (costs of searching for a counterparty to a financial transaction, costs of obtaining information about them, costs of negotiating the contract, costs of monitoring the borrowers, enforcement costs in case a borrower defaults) and costs related to information asymmetries (adverse selection, moral hazard, principal-agent and free-rider problems).

Exploiting economies of scale mainly reduces transaction, information and search costs. Financial intermediaries transform primary securities into secondary that are more attractive to surplus units because they are less risky, more convenient and more liquid. Banks benefit from economies of scale in transaction technologies and are able to carry out a rational diversification of risk, a process that allows them to offer lower loan rates relative to direct financing. Another way of exploiting economies of scale is by increasing the volume of transactions resulting in a decrease of the cost per unit. Financial intermediaries take also advantage of economies of scope where the joint costs of producing two complementary outputs (banking and insurance services) are less than the combined costs of producing them separately. However economies of scope are difficult to identify and measure.

Asymmetric information can generate adverse selection, moral hazard, principal-agent and free-rider problems. Adverse selection is a problem at the search/verification

stage of the transaction (ex ante). Possible solutions to adverse selection problem are “signaling”, which refers to actions of the “informed party” and “screening”, which refers to action undertaken by the less informed party in order to determine the information possessed by the informed party.

Moral hazard arises when a contract creates incentives for parties to behave against the interest of others and is associated with the monitoring and enforcement stages (ex post).

Financial transactions often create principal-agent problems. A typical example refers to a situation of separation of ownership and control in a firm where managers in control of the firm (agents) may act in their own interest rather than in the interest of shareholders (the principals) because they have less incentive to maximize profits than shareholders.

In credit markets one way to overcome agency and adverse selection problems, is for the parties to enter a relational contract. Relational contracts are informal agreements between the bank and the borrowers sustained by the value of future relationships. Moreover in recent years, the intense disintermediation process that has characterized the financial and banking markets, coupled with the increasingly common transaction banking, has started to challenge the importance of banks as relationship lenders. Transaction banking involves a pure funding transaction where the bank essentially acts as a “broker”.

There are five theories that explain why financial intermediation exists. These theories relate to: delegated monitoring, information production, liquidity transformation, consumption smoothing and the role of banks as a commitment mechanism.

Delegated monitoring refers to the role of banks acting as “monitors” of borrowers. Monitoring provides the *raison d’être* of banking. One issue that arises, however, relates to who is monitoring the monitor.

If there were no banks there would be duplication of information production costs for surplus units, in their effort to acquire information before they commit funds to borrowers. Because banks become experts in processing this information depositors are willing to place funds with a bank.

Banks can hold liabilities and assets of different liquidity features (deposits of high liquidity – loans that are relatively illiquid) on both sides of their balance sheet through diversification of their portfolios. In contrast, surplus units hold relatively undiversified portfolios.

Economic agents have uncertain preferences about their expenditure and this creates a demand for liquid assets. Banks provide these assets via lending and this helps smooth consumption patterns for individuals.

Demand deposits have evolved in order to commit banks to behave prudently and control their risk-taking propensity.

The significance of financial intermediation within the financial system is best appreciated in terms of the benefits it generates. These benefits accrue to ultimate lenders (surplus units), to ultimate borrowers (deficit units) and to society as a whole.

In order to have a thorough understanding of financial intermediation we should carefully examine how it works. Traditionally, transaction costs and asymmetric information have provided the foundation for understanding intermediaries. Such imperfections are central to the intermediation literature of the past two decades because if these frictions are reduced, intermediaries will become less important.

In recent decades, other forms of intermediaries such as pension funds and mutual funds have grown significantly. In addition, new financial markets such as financial futures and options have developed, as markets for intermediaries rather than for individuals.

Allen and Santomero (1997) (henceforth AS) argue that understanding these changes requires different theories of intermediation that stress risk trading, risk management and participation costs as the key reasons for the existence of modern intermediaries. More recently Scholtens and Wensveen (1999) (SW) raised a number of important issues concerning three key issues: First, it is pointed out that while the share of assets of traditional commercial banks has shrunk relative to GDP banks' assets have increased. Second, SW mirror a view that argues that banks have always been in the risk management business, suggesting that the origins of banking and insurance lie in their risk transforming and management functions. Third, they suggest that the theory of financial intermediation needs to have an understanding of the dynamic process of financial innovation to adequately address the transformation of the financial sector that is currently taking place globally. Schmidt et al. (1999) have considered the issue of whether banks have been losing importance relative to markets in France, Germany and the UK. They find that there is a change in the length of intermediation chains in all three systems but a general trend from intermediaries to markets.

If banks are shrinking relative to other intermediaries, but are stable relative to total financial assets then this implies that there is a switch from directly held assets to nonbank intermediaries. Other changes have taken place in the US banking system which are often

associated with the widespread view that banks are becoming less important. The growing importance of securitization is especially obvious in the transformation of the traditional mortgage. Formerly, a bank originated, funded and serviced the mortgage until it was repaid. Now, these services may be provided by many firms. This unbundling can be executed so smoothly that the mortgagee may be entirely unaware that it has taken place.

These techniques have been successfully applied to many other kinds of credit transactions, including credit card receivables, auto loans, small business loans, and the trend has now reached the standard commercial loans.

Banks are also losing ground on the liability side of their balance sheets. In the US, the population older than fifty will double over the next twenty years. Asset accumulation in anticipation of retirement is of great importance and it has made this market the fastest segment of household accumulation. The traditional bank entry in the competition for consumer savings – the time and savings account – is deservedly losing ground here to mutual funds that have much leaner cost structures and can offer significantly higher returns. Accordingly, bank time and savings deposits have declined steadily relative to fixed-income mutual funds since 1980.

New technology – often introduced by nonbanks – is jeopardizing even the fundamental role of banks in facilitating payments.

America's love affair with credit cards has also eroded a central role of demand deposits in the payment system.

The continued expansion of e-commerce suggests that this type of vehicle will become even more important over time for transaction purposes than the traditional demand deposit and the paper check. The net result of all this is that the relative importance of checkable deposits is declining, as are balances held in this form.

Because this decline in the traditional intermediation business is economically motivated and technologically driven, it is also likely to be irreversible.

Although the intermediation business has declined, banks have managed to prosper nonetheless, by shifting from traditional intermediation functions to fee-producing activities such as trusts, annuities, mutual funds, mortgage banking, insurance brokerage and transactions services. Bank value added as percentage of financial sector GDP has remained about the same for many years. The difference is that banks have a very different configuration of earnings. The result is that banks are no longer the primary source of business and consumer finance. Neither are they the main repository of liquid savings for the financial system. So they are much less dependent on traditional intermediation income.

The US financial system has been altered over the years in a very complex way. The changes that have resulted can be summarized as follows:

- Relative to nonbank intermediaries, the share of assets held by banks is declining
- Bank assets are not declining relative to total financial assets
- There is a shift away from directly held assets towards nonbank intermediaries
- The activities banks engage in have altered significantly. They have moved away from the traditional role of taking deposits and making loans to firms and consumers to fee-producing activities.

An important question concerns the extent to which the trends are mirrored in other countries. The trend observed in the US is not unique and appears to be present in a number of relevant economies.

AS argue that risk management has become one of the main activities of banks and other financial intermediaries in recent years. In contrast, SW argue that risk management has been at the heart of what financial intermediaries do since their origin. To shed light on this issue we need to examine the differences in total assets ultimately owned by households, including both directly and indirectly owned assets in US, UK, Germany, France, and Japan. The proportions of risky assets held by households in the US and the UK are much higher than in the other countries. Households in the US and the UK also hold more financial assets.

Standard financial theory suggests that the main purpose of financial markets is to improve risk sharing. Financial markets in the US and the UK are more developed than in the other three countries. But *cross-sectional risk sharing* does not eliminate macroeconomic shocks, which affect all assets in a similar way.

Departing from the traditional approach, Allen and Gale focus on the *intertemporal smoothing* of risks that cannot be diversified at a given point in time. One hedging strategy is *intergenerational risk sharing*. Another strategy involves *asset accumulation*.

Allen and Gale (1997) demonstrate that incomplete financial markets may not allow effective intertemporal smoothing, but long-lived financial institutions, such as banks, can allow this, as long as they are not subject to substantial competition from financial markets. This is because in good times individuals would rather opt out of the banking system and invest in the market, thus avoiding accumulation of reserves which they may not benefit from.

In bank-based systems such as those in Japan, France and Germany, risk management can be achieved through intertemporal smoothing. Financial intermediaries eliminate risk by investing in short term liquid assets. On the other hand, in market-based financial systems intertemporal smoothing by intermediaries is ruled out by competition from financial markets.

A complete theory of intermediation should explain both static and dynamic aspects of the process. In recent years a considerable literature on financial innovation has developed. However, this literature has been concerned mainly with the innovation of securities in financial markets. More needs to be done to understand this challenge.

In AS we suggested that participation costs are important to understanding modern intermediaries and their new role. A key point to appreciate, however, is the precise meaning of participation cost in this context. One interpretation of participation cost is that it is simply the time involved in making financial decisions. A much broader notion of participation costs is required to understand the kinds of innovation that are occurring. The degree of sophistication and specialization required to undertake complex risk trading and risk management operations is very high.

Much of what modern intermediaries do is to interface between individuals and increasingly complex financial markets. In order to do effectively intermediaries must make their products relatively simple to understand, even if they are not simple to implement.

Viewed in this context innovation becomes central to the theory of intermediation. Banks and other intermediaries need to develop new ways to lower participation costs. This allows everybody to benefit from improved cross-sectional risk sharing.

There are a number of studies but the perspective gained from this literature is much less clear than the results reported here. Data issues appear to be a large part of the problem. Two sources of information have been used as basis of corporate financial literature. One uses accounting and market data, and focuses on the capital structure of firms. The alternative method, which has been widely adopted, is to analyze sources and uses of funds data from national accounts. Our view is that a number of unresolved puzzles or at least open issues remain.

Banking business strategies

Banks make money by charging interest on loans. They also earn substantial amounts of noninterest income by charging their customers fees in exchange for a variety

of financial services. In recent years, banking companies have taken advantage of deregulation to generate substantial amounts of noninterest income from nontraditional activities like investment banking, securities brokerage, insurance agency and underwriting, and mutual fund sales. Noninterest income now accounts for nearly half of all operating income generated by U.S. commercial banks.

We have only recently begun to understand the implications of this shift for the financial performance of banking companies. Many in the banking industry continue to discount, underestimate, or simply misunderstand the manner in which increased noninterest income has affected the financial performance of banking companies.

We pay special attention to two fundamental misunderstandings about noninterest income at commercial banks. The first is the belief that noninterest income and fee income are more stable than interest-based income. We review the most recent evidence from academic studies that strongly suggest – contrary to the original expectations of many – that increased reliance on fee-based activities tends to increase rather than decrease the volatility of banks' earning streams. The second misunderstanding is the belief that banks earn noninterest income chiefly from nontraditional, nonbanking activities. We demonstrate that payment services – one of the most traditional banking services – remain the single largest source of noninterest income at most U.S. banking companies.

Banks earn noninterest income by producing both traditional banking services and nontraditional financial services. The key to achieve that was the *Gramm-Leach-Bliley Act* of 1999, which created a financial holding company framework that allowed common ownership of, and formal affiliation between, banking and nonbanking activities. In the late 80's the Federal Reserve allowed commercial banks to set up investment banking subsidiaries with limited underwriting powers, and in the mid 90's the Office of the Comptroller of the Currency granted national banks the power to sell insurance from offices in small towns.

The fees generated by these new, nontraditional activities are uneven across banking companies. On the one hand, investment banking has been a natural addition to the product lines of large banking companies that have large corporate clients. On the other hand, insurance agency has been a good fit for banking companies of all sizes that wish to cross-sell new financial services to their retail clients.

In recent years, advances in information, communications, and financial technologies have allowed banks to produce many of their traditional services more efficiently. These efficiencies not only reduced per unit costs, enhanced service quality, and

increased customer convenience, but also represented a source of increased fee income for banks.

Financial analysis of commercial banks often concentrates on bank balance sheets. But balance sheets have become an increasingly incomplete record of banks' profit-generating activities; they convey very little information about the fee-based activities that now generate over 40% of total operating income in the banking industry. Because income statements display the revenues and expenses generated by all of a bank's activities – whether or not they are represented on the balance sheet – we analyze bank income statements before moving on to bank balance sheets.

We construct a) composite (size-weighted) financial ratios using aggregate data for the entire commercial banking industry, and b) bank-level (unweighted) financial ratios using data from individual commercial banks. Large size allows banking companies to serve large corporate clients and provides them with access to low-cost, high-volume production, distribution, and marketing processes. But large size can make it difficult for banking companies to provide personalized retail service and/or built relationships with their small business loan customers.

The most systematic change in bank income statements during our sample period is the increasing incidence of noninterest income, which now accounts for about 20% of operating income at the average commercial banking company (13% in 1986) and about 47% of total industry operating income (30% in 1986).

The increased importance of fee income at commercial banking companies is a direct result of structural changes like industry deregulation, new information technologies, and financial innovation.

The dramatic increases in noninterest income over the past two decades have not occurred in isolation from other banking activities and, as such, they have left a trail not only on bank income statements but also on bank balance sheets. Low-yielding cash balances have declined for the industry as a whole alongside with investments in loans which have fallen substantially, from 62.3% to 52.5% of assets. The 10% point reduction in loan assets has been more than offset by a 12% increase in “other assets” such as the fair value of derivative instruments used to hedge against interest rate and foreign currency risk and receivables on the interest rate portion of asset-backed securities.

Real estate loans have become a much more important part of bank loan portfolios over the past two decades matching the need for banking companies to replace lost market

share in commercial and industrial loans as large business borrowers begun to bypass banks in favor of direct finance e.g. issuing commercial paper or high-yield debt.

In spite that deposits are the single most important source of financing for banking companies, deposit funding mark a decline over the past two decades, in favor of increased funding from federal funds, subordinated debt, “other liabilities”, and equity financing. This reflects at least three developments: increased competition from nonbanks, expanded ability of large banking companies to raise debt in financial markets, and regulations that now require banks to hold higher levels of equity capital than in the past.

The upward trend in noninterest income during the 90’s was generally believed to have two risk-reducing effects: shifting banks’ income mix away from intermediation-based activities would reduce banks’ exposure to credit risk and interest rate risk, and shifting banks’ income mix toward fee-based financial products and services would reduce earnings volatility via diversification effects. Recent empirical studies indicate that although an increase in noninterest income may improve bank earnings, this seldom occurs without concomitant changes in interest income, variable inputs, fixed inputs, financing structure, and other changes that have risky implications for the variability of bank earnings. First, interest income from loans may be less volatile than noninterest income from many fee-based activities. Second, a bank that shifts its product mix from traditional asset-based, interest-generating activities to nontraditional fee-based activities tends to increase its “degree of operating leverage”. Third, fee-based activities allow banks to use a greater “degree of financial leverage”.

Providing payment services is an under-appreciated source of noninterest income for banking companies and its importance may be growing. First, financial institutions have the ability to offer settlement services. Settlement here is defined as the irrevocable transfer of funds between parties in a payment system. Second, because the payments system is heavily reliant upon deposit-based instruments, banks are in a unique position to profit by cross-selling payment-based, payment-related, and non-payment-related products and services to their deposit customers.

Depending on their business model and competitive strategy, banks can and do charge fees for these payment-related services. We identify four separate sources of payment-driven revenues: traditional service charges on deposit accounts, trust and investment services income, credit cards, and ATM revenues.

Clearly, banking companies do more than just intermediate between depositors and borrowers. The industry has never limited itself to simply earning interest margins, and

over time it has moved further away from that stylized version of how banks make money. Of course, the concept of the “average banking company” has become less meaningful over time, because technological change and industry deregulation have permitted banking companies to experiment with innovative products, production processes, organizational forms, and business strategies.

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balances have declined for the industry as a whole alongside with investments in loans which have fallen substantially, from 62.3% to 52.5% of assets. The 10% point reduction in loan assets has been more than offset by a 12% increase in “other assets” such as the fair value of derivative instruments used to hedge against interest rate and foreign currency risk and receivables on the interest rate portion of asset-backed securities.

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Bank evaluation or what is the trouble with banks

The value or net worth of a bank is the difference between the values of its assets and its debt liabilities. There is some uncertainty regarding the valuation of banks' assets and liabilities, which should be considered a normal and acceptable occurrence as long as it results from a fair and consistent application of the accounting norms. There are four methods of valuation used in financial statements:

1. *Historical cost* or *book value* is the price a company paid for an asset when it acquired it
2. *Current cost* or *market value* is the price that a company would have to pay today to acquire an asset
3. *Realizable value* is the amount that a company would expect to receive from an asset sold in an orderly disposal
4. *Present value* is measured as the present discounted value of the net estimated cash flow associated with an asset.

Most countries require their banks to value their loans and deposits using historical cost. Investment banks and money mutual funds with investments in financial assets constantly need data on the current value of their investments. Obtaining current values may be problematic in emerging markets and even in deep and actively traded organized

markets current values are available only for a limited number of assets and in a limited number of countries. Another problem with market valuation of the loan portfolio is volatility. The economic value of loans is affected by interest rates changes. Under market valuation they would need to be permanently revalued accordingly. The same applies to deposits. Therefore market valuation for loans and deposits would be costly and highly complex daily task in a large bank. More important it would lead banks to post a succession of sometimes large, potentially destabilizing, gains or losses on their deposits and loans, despite the fact that, for most of these items there is a contractually determined amount and payment date.

In practice, historical costs, although economically inexact, continue to be relied upon loans and deposits, with the approval of accounting authorities. Market values are used for specific items only, such as traded securities.

In an alternative attempt to keep loan valuations contemporary, banks use loan classification and provisioning. The rules for loan classification and provisioning are set on the table below:

Classification	Criteria	Required provision
Not classified – “unimpaired”	Loan is current and has adequate collateral; original source of repayment is adequate	Amount based on prior charge-off experience
Classified – “substandard”	Inadequately protected by borrower’s capacity and/or collateral; distinct possibility of loss	15% - 25%
Classified – “doubtful”	As above but also recovery in full is highly questionable	50%
Classified – “loss”	Extreme high possibility of loss; uncollectible with little value; difficulties in recovery so great that the asset can no longer be considered “bankable”	100% (less the realizable value of collateral)

Provisioning will prevent the overstatement of net income and avoid paying taxes on fictitious income. In addition, a bank should not continue to accrue interest on loans that become nonperforming because doing so overstates the bank’s income, capital, the tax liability and the ability to pay dividends.

For all the aforementioned reasons bank supervisors require that both the securities issued by a bank as well as those that it holds in its asset portfolio, be valued at original or book values. The market value of the former is additional information to the bank's owners and managers at all times and might usefully be recorded in a footnote to the bank's accounts. If the bank were to be sold or liquidated, market, present or liquidation values would likely become decisive. While book values are appropriate when the bank is expected to continue in business and to hold the asset to maturity, market values are relevant to securities that the bank intends, or is forced, to sell before maturity. Sale could occur not only if the asset is part of a bank's trading portfolio, but also if the bank is illiquid, is to be sold or liquidated.

Several problems arise from applying these techniques. First, due to asymmetric information (borrowers know more about their condition and prospects than their bankers) banks should carefully evaluate their potential borrowers and monitor their progress afterwards. To prevent competitors from free riding on the information concerning their borrowers, banks keep it confidential. Second, intangible assets such as goodwill, profit opportunities and underpriced guarantees are not taken into account using book values. Despite efforts made for many years by the Basle Committee to value these items in order to require banks to keep capital that will protect them against losses, it is agreed that too little have been achieved and only a rough approximation of their value can be accomplished.

Moreover, valuation of business and bank assets and liabilities becomes more complex in an inflationary environment. A bank's general reserve may fail to keep up with inflation. On the other hand, deflation, that occurs, for example, when an asset bubble bursts, exposes banks to defaults and losses on the sale of collateral.

Even stable banks and businesses can become volatile when the business environment changes abruptly. These changes make it more difficult for the bank to value its portfolio and maintain adequate provisions. Consequently, the value of bank assets may plummet during economic downturns.

Similarly, it becomes more difficult to value a bank when its viability is in doubt. Assets held in the investment portfolio at original cost may have to be sold and then market, realizable, or present values become more relevant than historical cost.

In case of outright bank distress, the approach should be different. The level of uncertainty regarding the bank's (negative) net worth is very high and cannot be

substantially reduced. Rough estimates are sufficient to prepare adequate policy decisions. The estimates for losses should be prepared in the form of a range, thus also expressing the degree of uncertainty.

A second consequence is that the resolution plan must deal not only with losses, but also with the degree of uncertainty concerning how much could be recovered. In the case of plain liquidation, the burden of uncertainty is shouldered on the creditors. In the case of a resolution scheme avoiding liquidation, one party needs to be allocated this additional burden of uncertainty.

Bank managers may be encouraged by tax authorities and owners to continue booking interest due but not received, rolling over both principal and unpaid interest into new and unclassified loans (“evergreening”) because overstating their income allows banks to pay more taxes and dividends.

Regular on-site inspections of banks are indispensable. The inspectors should take a qualitative approach to the assessment of the valuation methods and assess the adequacy of the provisions. They need to examine whether the financial statements are genuine and to what extent and to check if management has taken advantage of the flexibility of the valuation rules and how much.

In short, valuing banks assets and liabilities will always demand experience and honesty.

In spite of the inherent difficulties in assessing a bank’s assets and with all the evolving in the banking industry during the past years, one would think that everything is working perfectly.

In environments where legal foundations are weak and information institutions are underdeveloped, banks are the best suited financial institutions. A central feature of banks is that they are relational: they invest in relationships with their customers and gain access to private information through these relationships. When it comes to recalcitrant borrowers they have the power to enforce their rights. Banks can even profit from inflation and currency instability. Emerging financial markets’ governments can even favor banks if interest rates are regulated or directly own them so as to manage the flows of capital within their countries. Thus, it is no surprise that banks dominate emerging financial markets.

Nevertheless, during the 1980s and 1990s, banks in virtually all emerging financial markets have been privatized. This meant weakened bonds between banks and governments, lower reserve requirements, abandonment of interest rate controls and elimination of barriers to entry in the industry.

What no one could foresee was that in spite of the liberalization of the banking sector, the development of countries both financially and otherwise, and the improvement of information technology, banking crises would occur in industrialized countries as well as the developing ones and in such magnitude. Banking crises have occurred throughout history, as long as there have been banks, but the size of losses recently has been a departure of the past.

In the 1980s and 1990s banking crises were strikingly greater than before in terms of number of countries involved, percentage of banks involved, and the cost of resolution. The world had not seen anything like the epidemic of bank losses of the late 20th century. In order to understand the reasons behind such bad banking decisions we need to take into account three factors which taken together they may account for much of the unprecedented size and scope of losses that we know observe in banks: connected lending, moral hazard, and overcapacity.

Connected lending occurs when a bank directs loans to parties who are somehow related to the bank: owners, board of directors, their families or friends, companies in which the bank owns equity or maintains some important governance relationship with them. Banking decisions taken in the abovementioned context become the centre of industrial empires.

A respectable version of connected lending was found in Japan and Korea, where many of the largest enterprises were organized into large industrial groups, keiretsu in Japan and chaebols in Korea. Even though those two systems appeared to have important advantages over the western model of shareholder governance, they were abandoned under the pressure of mounting bank losses due to non-performing loans, suggesting capital allocation decisions that were less than optimal.

Probably the best answer on how to control connected lending is disclosure and monitoring. Also, the existence of a limit on the total percentage of assets that a bank can dedicate to each sector of the economy in order to ensure diversification is considered necessary. Effective regulations limiting connected lending can be tricky to enforce. Therefore, enforcing these rules requires a detailed monitoring of the composition of stockholders of firms throughout the economy.

Moral hazard is a problem of skewed incentives. It occurs when a risk decision is asymmetric: the agent making the decision stands to benefit if the decision is a good one, but for one reason or another does not pay a commensurate price if the decision is bad. It is a case of “heads I win, tails someone else loses”. Moral hazard can also arise from conflicts

of goals and incentives between bank stockholders and their employees as a result of faulty compensation schemes. For this reason, traditionally, banks have not paid large cash bonuses to their loan officers. Among traders, however, the tradition of cash bonuses is strong, because the profitability of most trading positions is marked to market daily, and losing positions are quickly closed out. Moral hazard, as the notorious case of Barings Plc illustrates, can pose a deadly risk for trading banks.

The problem becomes particularly pronounced when a bank's net worth is low or negative. If the regulators are alert, they should pressure the bank to increase its capital at once or shrink its assets.

An extreme kind of moral hazard can occur when the government not only guarantees bank deposits but also pampers the banks' owners and managers – and even the owners and managers of the firms unable to pay their debts to the banks.

The evolution of all countries, over time, toward more efficient and competitive financial markets which results in a decline in the profitability of traditional bank lending, constitutes another reason why banks so often find themselves nowadays in trouble. The abovementioned changes result in overcapacity and loss of bank franchise value. The logical consequence should be the shrinkage of the banking industry instead of bailouts.

As securities markets grow and communications technology improves, information about companies becomes widely available at low cost. So, securities markets engage more and more in financial intermediation providing both savers and borrowers with more attractive rates so long as information is not necessary. This phenomenon is called disintermediation.

In developing countries, the value of bank franchises can be adversely affected by financial liberalization. Unfortunately, countries that liberalize rapidly without providing strong foundations for a private financial system can get into serious trouble.

Two things seem quite clear. The first is that financial liberalization is important for the long-run health of the economy. The other is that quasi-liberalization – where banks' profits are privatized but banks are protected from competition and subsidized by taxpayer bailouts of their losses – can be riskier than no liberalization. The task is to liberalize in a way that avoids the incentive distortions that produce bank collapses.

The three problems – connected lending, moral hazard, and excess capacity – are greatly magnified by the central problem of unconditional government protection of banks. In that respect, governments' role should be to regulate the industry enhancing more efficient performance. Thus, standards for appropriate behavior by government regulators

are widely recognized as crucial. One of the key tenets of the Basel Committee is that banking supervisors must set prudent and appropriate minimum capital adequacy requirements for all banks. Optimal regulatory behavior also means that banks with low but still positive capital are not permitted to go on lending until their capital ratios are brought back to acceptable levels. Bank capital depends heavily on the policies of management and regulators toward nonperforming loans. Regulators may not press for larger loan provisions or they may indulge in forbearance.

The only path to safety and lasting growth is a program of credible financial liberalization that is carefully designed and implemented to promote competition and discourage abuse of government protection. Countries that manage their banking systems inappropriately are now paying high prices for their mistakes.

Financial repression, liberalization and privatization

“Emerging countries” is an expression that we often use and it usually implies a movement away from government domination of the markets and towards private markets, a trend of the entire world economy during the 1990s.

The financial system cannot function properly unless the institutional foundations are strong. Governments can play a critical role in creating or strengthening those foundations. On the other hand, governments in pursuit of their own agenda, often weaken the core legal and economic institutions on which financial intermediation depend.

The most basic foundational element is law. Financial intermediation, whether through banks or securities markets, creates contractual agreements between companies and individuals. Banks depend on laws to clearly define and protect their rights as creditors. Securities markets, in particular, offer massive opportunities to defraud investors. All the above require a government determined to create a strong legal environment.

In addition to the legal base, a second foundational element is information. Because banks operate as collectors of private information from their clients they have an advantage in enforcing their contractual rights and limit the risk of default on their loans. For securities markets to function well, public disclosure of information is essential to investors, especially the unsophisticated ones, and a strong incentive for private firms who want to excel. Thus, standardized disclosure practices can help markets work better.

The third foundational element is a sound currency since it helps to avoid depreciation or collapses of exchange value which are disruptive to international trade and to capital markets.

Finally, establishing effective prudential regulation and supervision of banks are of central importance to financial health and economic growth.

In order to have a clear view on the damage that financial repression can cause to development we need to have a closer look. Researchers have identified six ways in which governments often repress their financial system:

1. By imposing ceilings on interest rates paid by banks for deposits
2. By imposing high reserve requirements on banks
3. By directing bank credit
4. By owning and/or micromanaging banks
5. By imposing barriers to entry into the financial industry, especially to foreigners
6. By imposing capital controls

All the above actions concern the relationship between governments and banks to the advantage of the former and to the disadvantage of savers and efficient capital allocation.

Imposing controls on deposit rates was very common for governments even in the US until the 1970s (Regulation Q). But they operate as obstacles to loan supply and as competition from efficient securities market increases they become less appealing. Banks in all countries are required to redeposit a certain fraction of their own deposits as reserves at the central bank usually without interest. Zero-interest reserve requirements thus constitute an implicit tax on banking. Governments find it very attractive to use these reserves in order to lend directly to “selected” industries or through national banks. Following that practice though, the government is reducing the supply of credit available for private (nondirected) use.

The simplest way for a government to repress the financial system is to own all or at least the largest banks. At several points in the 20th century the state-dominated structure of the banking industry appeared to produce economic results superior to those of market economies. It turned out that the abovementioned structure was not a long-term means of producing growth.

Another typical way of repressing the financial system, closely connected to protectionism, is to restrict access to either local entrepreneurs who want to enter the industry or foreign banks from operating in the country. Welcoming foreign banks will

make the banking industry more efficient and less willing to comply with government “guidance”. Governments in order to control capital flows may also restrict the development of securities markets. The latter to function effectively need access to bank credit. Thus, especially the small, younger firms, which are often the engine of growth in emerging economies, will have a hard time funding their needs.

Emerging markets are, almost by definition, locations of high investment opportunity. Access to global financial markets reduces financing costs and enables firms to take advantage of these opportunities. Governments as a means of supporting the country’s exchange rate policy can limit entry into capital markets by imposing taxes on capital inflows. Restricting the flow of capital can seem a cure worse than the disease.

There is an important connection between financial repression and the level of economic activity or wealth. The correlation is quite clear if not uniform. Financial development is not a sufficient condition for high wealth but significant wealth is highly unlikely to materialize without a liberal financial system.

The notion that the financial system is actually necessary for growth was argued by R. McKinnon (1973) and E. Shaw (1973) who distinguished between inside money, meaning bank deposits supporting private sector loans, and outside money, that is money in the central bank such as bank reserves and cash. Economic growth is stimulated by encouraging people to trust the banking system and create more inside money. Higher interest rates and lower reserves requirements would help in that direction.

Although, there was no hard evidence that allowing for higher interest rates increases savings and hence bank deposits which will fund high yielding investments, the McKinnon-Shaw view focuses on the efficiency of the allocation of savings. A second objection to McKinnon and Shaw is that some countries have grown rapidly without liberalizing their financial systems (Soviet Union, Iceland, Cyprus). That stands but not for long-term growth as recent economic history shows.

Finally, since the 1970s an increasing amount of effort has been spent on resolving the question of whether the correlation between economic and financial development reflects a causal contribution of the latter to the former. Three different approaches to that problem have proved particularly informative, and all three have indicated strong causal effects of financial development for economic development.

In order to assess the tendency governments had to repress their economies since financial repression poses such obstacles to economic growth and efficient capital market allocation, we need to take into account that not everyone loses from financial repression. It

benefits the government first of all and firms or individuals with close connection to it. Modern governments often choose financial repression as a means to laying claim to a bigger piece of a smaller economic pie.

The major economic policy trend of the 1990s throughout the world, namely the trend toward privatization and financial liberalization. To understand the origins of the privatization movement, one must begin by understanding the origins of the state ownership wave of 1930 – 1980, and how the forces that favored state ownership were undermined in the 1980s and 1990s.

Three related trends in thinking about economic policy underlay the growth of government ownership: 1) socialism, the view that private ownership produces undesirable exploitation of workers and inequality of wealth, 2) the new economics of ‘market failures’ which emphasized inefficiencies from private allocation of resources, and 3) the new critique of global openness, a protectionist doctrine rejecting the desirability of relying on free trade and unfettered private capital flows to promote economic growth.

In the 1980s, a broad-based change of thinking about state-owned enterprises begun to take hold. The trend started in the UK with the election of the conservative government, led by M. Thatcher in 1979, and spread out to the rest of the world. Proper business attitudes were bolstered and a work ethic was established through an increasingly orderly legal and institutional environment that encouraged long-run thinking as opposed to short-run opportunism, and by placing boundaries on government powers that made it clear that productive activity was more rewarding than nonproductive “rent” seeking.

To understand why privatization was so powerful and so important to economic success we need to explore the underlying reasons why state-owned enterprises have underperformed relative to privately owned firms almost everywhere contrary to the expectations and prescriptions of socialist politicians throughout the 1960s and 1970s.

The application of financial economics provides a way of evaluating the quality of growth in national income, which is somewhat different from the macroeconomic perspective offered by national income accounting. In corporate finance, growth is not an unequivocal good. It is costly and often dangerous because it requires the expenditure of resources. The nexus of growth is capital i.e. the total amount of funds available for investment in enterprises. A capital market provides plenty of funds to firms that can promise high-expected rates of return while struggling firms may be left with no new sources of capital at all. The rule for corporate managers to follow when deciding whether to invest capital in some project is the Net Present Value (NPV) of the project. The positive

NPV rule says that managers should make the investment if the NPV is positive and reject it if NPV is negative.

The problem of state ownership is inefficiency. State-owned enterprises tend to consume more capital inputs, than they produce in outputs. This is value-destroying growth. There are four significant factors that explain the inefficiency of state-owned enterprises:

1. Multiplicity of goals
2. Market structure (monopoly)
3. Weak incentives
4. Soft budget constraint

The collapse of communist regimes in Central and Eastern Europe over 1989 – 1991 was one of the defining events of modern times. The cause of this collapse was the economic failure of the state-owned enterprises that managed the entire economies of the communist countries. To be sure, the regimes were unpopular because of their political repression. But when economic failure became a reality popular support of communism vanished. Privatization of the state-owned enterprises became a high priority of reformers throughout the region. There is a logical sequence of preconditions to privatization:

1. Create legal structures for property rights, corporations and contracts
2. Restructure state-owned enterprises in corporate form
3. Introduce competition
4. Eliminate government price setting
5. Introduce modern accounting and auditing

A complicating factor was the spontaneous privatization that rapidly evolved during 1989 – 1991. As the system collapsed, state-owned enterprises managers were left with no direction. Sensing the opportunities, many of them begun to act as de facto owners of their enterprises.

The urgent need everywhere was for effective monitoring and governance of corporations. The privatizations highlight the need for such monitoring and the critical monitoring role that financial institutions play in a modern economy. The mass privatizations included few financial institutions. As industrial privatizations went forward financial liberalization should be promoted. Financial liberalization can be defined as some combination of the following six kinds of constrained relaxation:

1. Elimination of interest rate controls
2. Lowering of bank reserve requirements
3. Reduction of government interference in banks lending decisions
4. Privatization of nationalized banks
5. Introduction of foreign bank competition
6. Facilitation and encouragement of capital inflows

The benefits of financial liberalization are very substantial. Above all, financial liberalization imposes hard budget constraints on firms and pushes them toward value creation.

Economic growth can occur, sometimes at impressive rates, in the absence of strong private financial institutions. It would seem, however, that such growth is often inefficient, and ends badly, as with the collapse of communism. A successful financial system performs a selection role, sending funds to firms and projects that promise high levels of value added. Equally important is the monitoring function of private financial institutions.

The experience with privatization and financial liberalization during the 1980s and 1990s give us a new perspective on economic development. Sustainable growth is a financial concept. A firm grows at a sustainable rate when its return on equity, dividend payout, and growth rates of assets and liabilities are set at compatible levels, so that each year's retained earnings provide the basis for growth in balance sheet categories proportionate to sales growth. Translating that insight to development economics, a country grows at a sustainable rate when its capital investments earn returns in excess of the cost of capital, and when aggregate growth in profitability is high enough to sustain rising levels of debt. When that occurs, the financial institutions that fund investment can build their own capital base at a rate proportional to the growth of the economy. When that condition is not met, financial institutions fail alongside value-destroying borrowers, shutting off supplies of future credit.

Totally free banking, with no deposit insurance and no regulation, appears virtually impossible in a modern developing economy. In today's world, the near-universal government protection of deposits requires government to monitor and regulate banks in a variety of ways.

Countries also need regulation to protect consumers from fraud, particularly during the transitional phase when financial institutions and contracts are being established where they had not existed before.

Perhaps most importantly, privatization and liberalization, to be successful, must be part of a broader and more fundamental set of reforms to the economic and legal environment.

Mechanisms for risk evaluation are critical in any market-based financial system. Published ratings by agencies such as bond rating agencies could play a role in assessing the risks of financial institutions.

In summary, a strong financial system based on the private incentives of financial institutions is needed to monitor the business system, and thoughtful government rules are needed to monitor the financial system. Experience suggests that no other way of organizing affairs can succeed for long.

The frictions of the financial system

The 1960s were a high-water point for efficient-market theory: Many financial economists believed that financial markets were almost fully efficient in the sense that the prices of stocks and bonds impound all public and even most private information that might be relevant to them. If this were true, then neoclassical economic models show that financial markets would optimally allocate savings, and the only public policy prescription would be to prevent government from interfering with this allocation process.

The 1970s and 1980s, however, witnessed a major change in perspective. Empirical research turned up a remarkable number of anomalies in the patterns of stock market returns. Credit markets were found to display inefficient means of allocating loans. Theorists seeking reasons for these phenomena found that economic theory had a hard time explaining even simple facts.

The recent literature in banking and financial contracts has developed a new consensus that financial markets are by no means fully efficient even in the most industrialized countries. Recognizing this is a little like recognizing that real-world engineering must be performed in a world full of friction.

By looking closely at information and control problems (the analogue of friction in the financial system), one can find explanations for many of the important theoretical questions and empirical anomalies referred to above. The existence of debt contracts and

banks is typically traced to their role in economizing on the cost of gathering information about borrowers and controlling the behavior of firms and individuals who receive loans. Anomalies in equity markets, at least to some degree, seem to reflect problems that arise when individual investors lack information about the risk and return opportunities in securities markets.

The central information problem of financial markets is *asymmetric information*. The new literature emphasizes four related implications of asymmetric information for financial contracting:

1. Asymmetric information tilts the market toward *debt* and away from public equity.
2. Asymmetric information tilts the debt markets toward *banks* and away from securities such as bonds, notes, and commercial paper.
3. Asymmetric information tilts debt toward *short maturities* or toward contractual rights for creditors to accelerate payment if a contract covenant is violated.
4. Asymmetric information tilts bank lending toward *secured loans* and away from unsecured loans.

Screening is necessary before an investment decision is made. It refers to the basis for making investment decisions when investment quality cannot easily be observed.

Adverse selection is a very general problem in economics and it has two effects: it tends to *lower the price* of commodities about which sellers know more than buyers, and in some cases it can *close the market* altogether. The adverse-selection problem is also the most common explanation for credit rationing. Asymmetric information means that sufficiently high risks may be avoided rather than priced. It also means that high-quality borrowers are paying a premium because of the presence of low-quality borrowers. So adverse-selection has two negative effects on debt markets: It makes them more expensive, and it closes them off to borrowers above a certain level of risk. High-quality borrowers often seek to avoid rationing and excess risk premiums by attempting to *signal* that their quality is higher than the average.

Monitoring refers to the task of following the fortunes of an investment after it is made because investors need to be assured that the firm is not acting in ways that are detrimental to their interests. This version of principal-agent problem has been widely studied and is best solved by a combination of disclosure laws and well-enforced shareholder rights.

When wealthy individuals or families control the firm and the CEO is part of the family, the important control conflicts are between 1) inside and outside shareholders and/or 2) equity holders and debt holders. Banks need to beware, just as minority shareholders do, of “tunneling” – the expropriation of corporate assets by managers and/or controlling shareholders. The temptation shareholders have to increase risk at the expense of creditors is a form of moral hazard. Creditors can protect themselves to some degree by holding short-term debt. Restrictive covenants may also help but covenants will not work unless they are monitored and enforced.

Monitoring is often a prohibitively expensive process that is difficult for individuals to conduct on their own. Naturally, financial institutions arise to perform this role on behalf of many suppliers of funds. They are well suited to perform both screening and monitoring. Screening by investing in information and monitoring because after they have made a loan, they establish an ongoing relationship characterized by regular gathering of information which makes them natural monitors of the firms in question.

We need to examine the problem of information asymmetry on the bank side of the market. When considering mechanisms that limit bankers’ incentives to misbehave, it is important to distinguish market-based monitoring and control from regulatory monitoring and control. *Market-based discipline* relies on the suppliers of funds to banks, primarily depositors. Some are large, institutional, and informed and should make monitoring of banks their business in order to prevent a bank getting into trouble which results to bank runs. A disadvantage of market-based discipline, however, is that innocent and uninformed depositors can lose money when banks fail. That is why governments in industrial and developing countries alike decided almost universally to insure some or all bank deposits in the present era. This means that government step in to perform the role of monitoring. *Regulatory discipline* means that the government itself screens and controls bank riskiness through licensing procedures, capital requirements, and a variety of prudential regulations, and it monitors banks through periodic examinations by government officials.

As financial markets develop, banks tend to play a smaller role and securities markets become increasingly important. Their growth encourages the development of *institutional investors* to perform screening and monitoring functions on behalf of their less-informed individual clients. There are three reasons that institutional investors have been so important in spurring private equity financing, reducing the costs of public equity offerings, and thus expanding access to these markets. First, because institutional investors buy in large quantity, they economize on the physical costs of selling. Second, institutional

investors maintain contact with investment bankers over many successive issues. Third, the large size of institutional investors' holdings has also permitted them to play a new role in corporate governance.

A central issue that cuts across all approaches to implementing governance is the appropriate span of control. In developed and developing economies throughout the world, one sees many examples of conglomerate organization. Some of their benefits are personal gratification, political influence, obfuscation, diversification, and internal capital markets. Academic research has suggested two reasons why conglomerates tend to be inefficient. First, is the problem of competence: It is hard for holding company management to be competent enough in dozens of business lines to direct the activities of the subsidiaries. Second and most important, internal capital markets can easily lead to value destruction. Conglomerates may function relatively well in developing countries because they enjoy an abundance of opportunities but suffer a shortage of management talent.

One must first decide what the overall *goal* of private enterprise is, and then choose the governance system best suited to achieving that goal. There are four primary models of corporate governance found around the world:

1. State ownership and control
2. Family ownership and control
3. Bank-centered control systems
4. Control by dispersed shareholders

Each system has characteristic strengths and weaknesses and there is no one-size-fits-all optimal method of governance.

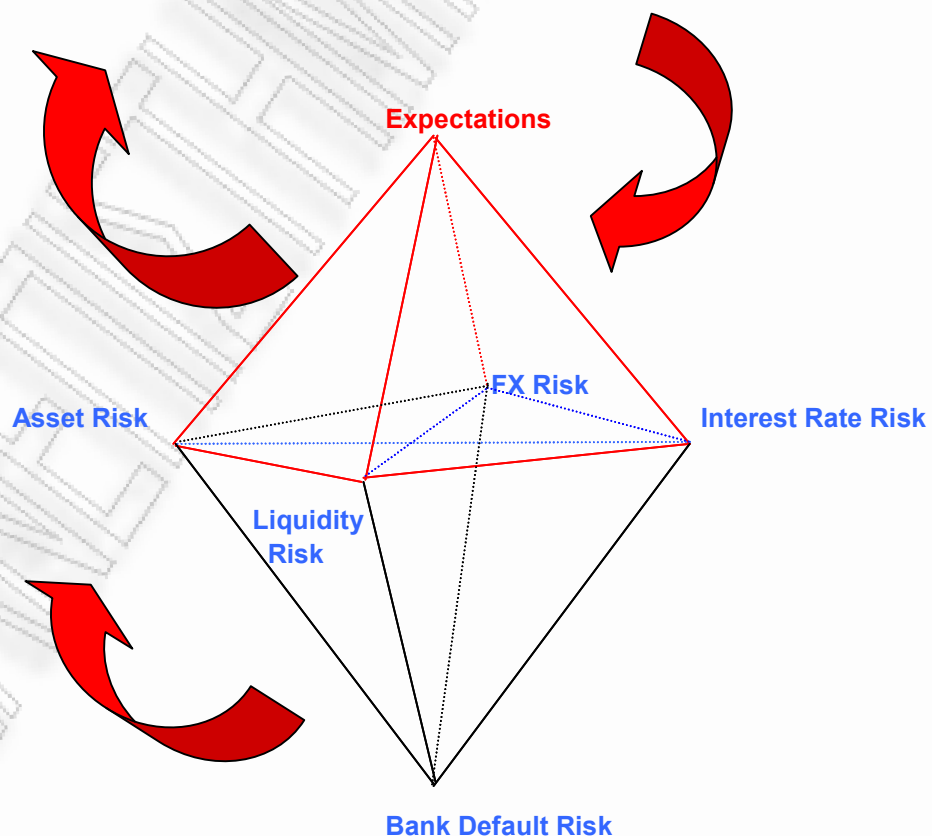
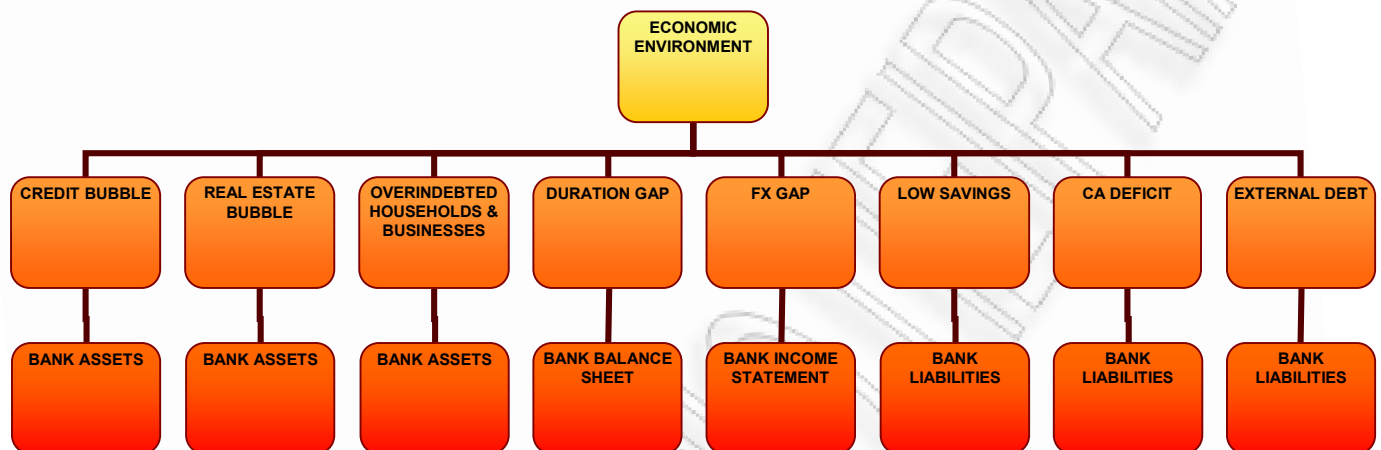
Securities markets cannot possibly work well unless public, arm's-length investors have access to substantial information about the issuers of securities. Therefore, a fundamental need of securities markets is for full and uniform disclosure, mandated by law. Regardless of disclosure laws, information production does not happen by accident, but is the product of deliberate effort. Wherever securities markets work well, an institutional setting supports them by generating critical information. Accounting firms are perhaps the most fundamental and important institutions of information in financial markets. Credit rating agencies are important in promoting the smooth working of commercial debt markets. Whenever there is a stock market there are stockbrokers, and they typically hire stock analysts to supply them with ideas, and recommendations for clients. Finally, one must emphasize the role of the financial press. There is a large market for business and financial newspapers and online services.

РАНЕЕЧНО ТЕПЛА

CHAPTER 2

A MODEL

In the following section we will analyze four crises, namely, the Mexican crisis, the Nordic banking crises, the Asian crises, and the current financial crisis. Apart from the evidence, the use of a helpful and easy tool (courtesy of Prof. A. Antzoulatos, University of Piraeus) will demonstrate the interconnections of the modern financial world:



In order to understand the financial crises we use the balance sheet and the income statement of any bank, and the five risks banks face. Every risk apart can drive a bank to failure and as a consequence a bank crisis may erupt. Even though this is a slow procedure and sometimes reversible, expectations act as a natural accelerator and make it impossible to be reversed. Every risk interacts with each other and in the right circumstances i.e. expectations that the financial system is unstable due the abovementioned imbalances the result is a bank failure or even worse a general bank crisis.

We will now illustrate how the imbalances of the economic environment interact with the five risks that banks face by giving some examples. First, we must distinguish between micro and macro-economic imbalances. In the former category we have credit and real estate bubbles, overindebted households and businesses, and duration gap. In the latter, fx gap, low savings, current account deficit, and external debt. The imbalances are directly linked with bank risks. For instance, a large, lasting and increasing current account deficit is a sign of overindebtedness of the country from abroad and also overinvestment in the country. The former leads to increased credit risk since it is likely that over-indebted businesses will not be able to repay their loans and the latter to non-profitable investments since they are not justified by the cost-benefit analysis.

The examples refer to a single bank but when we deal with accumulated imbalances and expectations concerning the financial system as a whole, the risks that a bank faces reflect the systemic risks and the failure of a single bank reflects the meltdown of the banking system.

In case of an increase of the NPLs the assets of a bank fall thus increasing the possibility of a bank failure. In case the decrease in the value of assets is such that their total value is less than equity the bank have failed.

Currency devaluation increases the value of bank liabilities in foreign currency on the liabilities side of the balance sheet and at the same time increases also the value of loans in foreign currency on the asset side. On the income statement, interest expenses are increased and interest income from local businesses is decreased due to the devaluation.

Each of the abovementioned risks interacts with the other. For example, asset risk interacts with interest rate risk since an increase of the former raises the cost of borrowing for the bank. Moreover, in case of a currency crisis the economy will face a recession. As a result businesses become unable to repay their loans.

MANEJAMENTO DE PAA

CHAPTER 3

APPLICATIONS

The Mexican crisis

Since Mexico is a genuine Latin American country, the crisis that erupted in 1994 – 1995 was in many ways similar to the Latin American crisis of 1982 – 1983. Both cases faced large-scale and persistent current account deficits (table 1). Another similarity, even though potentially misleading, is that private capital inflows not only financed the current account deficits until 1994 but, with the help of official inflows, even allowed the built-up of external reserves (table 2). But the reasons that led to the crisis and the sequence of events were quite different.

In 1990 – 1993 private capital inflows amounted to \$ 36 billions in the form of portfolio investments. More than 60% of those inflows came through the banking system whereas the rest were direct foreign investments (table 3). These capital inflows were attracted by the climate and the results of economic reforms that begun in the late 1980s.

Deregulation and privatization, the elimination of fiscal deficits, positive real interest rates, and steadily declining inflation all played their part. A large part of portfolio investments was guided to common stocks. As a result, by the end of 1993 stock prices were 10 times higher than the average of 1985 – 1989. The result of large-scale capital inflows was that the real exchange rate by the end of 1993 gained more than 30% in comparison with 1990. A real appreciation of this scale and in such a short period affected the current account both directly and indirectly. The latter was due to lack of sterilization of the Mexican economy. Thus, the monetary base expanded at a rate higher than would have been required for maintaining domestic monetary balance, allowing fast credit expansion to the private sector (table 4).

Banks were able to pursue such a credit expansion due to liberalization. Since government borrowing was at the time reduced, banks had the long awaited opportunity to increase credit to firms and households. The credit expansion had two basic demerits in the period between 1990 and 1994: 1) was the dramatic decline of the private savings ratio from 14.3% to 10.4% and 2) the national savings ratio fell to 14.7% from 20.4% (table 5). The situation was aggravated by high interest rates which on the one hand were not high enough in order to slow the credit expansion in pesos but was high enough to encourage borrowing in dollars.

The assassination of the ruling party's presidential candidate in spring 1994 made things even worse, since downward pressure on the exchange rate had started from January with the slowdown of capital inflows. The Mexican government in an attempt to react to

potential depletion of foreign-exchange reserves issued the Tesobonos (dollar-indexed Treasury bills) which were bought both by domestic and foreign investors. By the end of 1994 \$ 17 billions of the Tesobonos were held by foreign investors thus increasing foreign borrowing. Capital flight continued until the depletion of gross foreign-exchange reserves and by December 1994 it was clear that the exchange rate could not be maintained so the Mexican authorities let it float. Alongside the currency, the Mexican stock exchange collapsed.

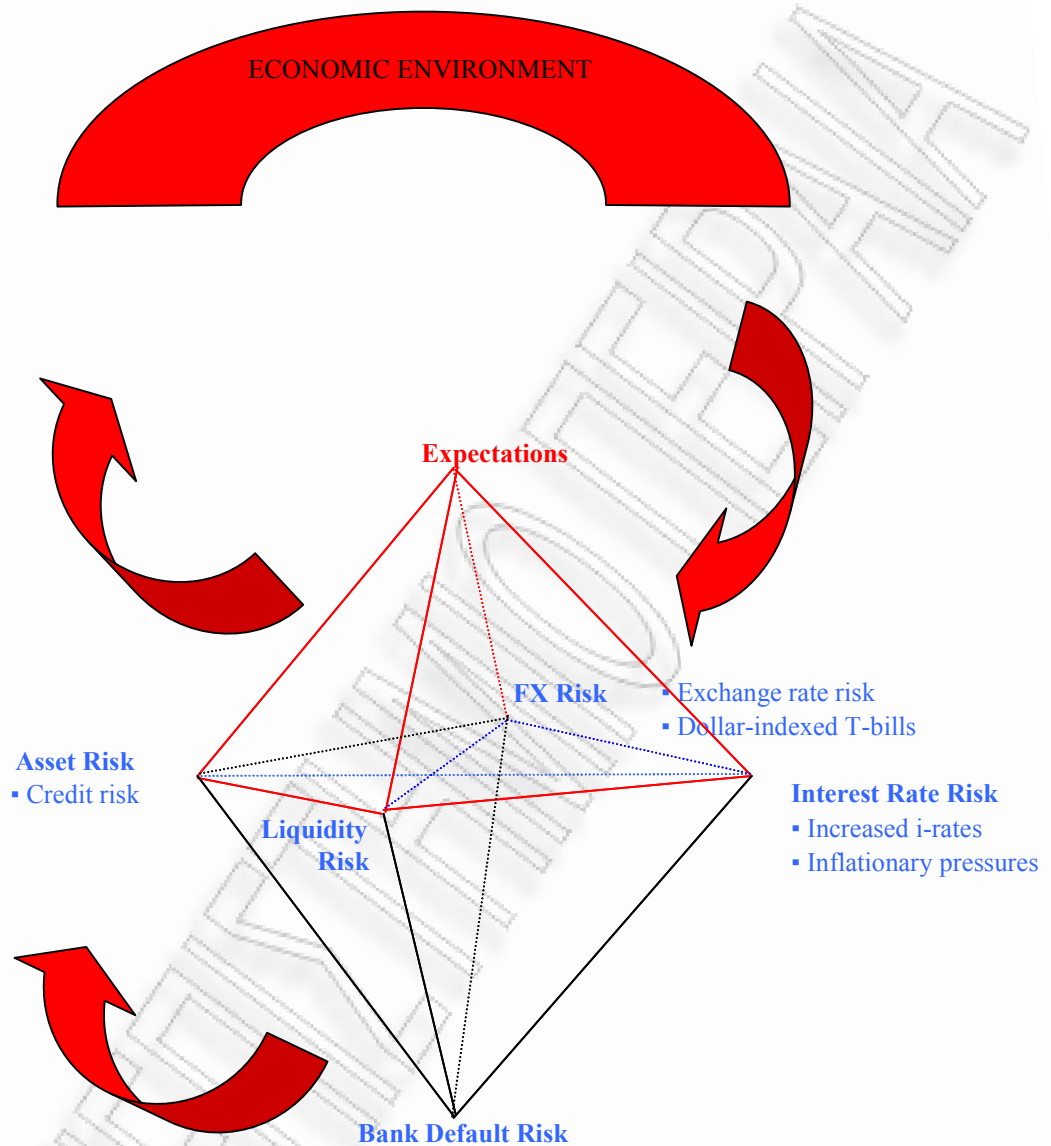
Following the Mexican crisis, other Latin American countries were affected but this “tequila effect” did not last long.

The responses to the crisis consisted of the abandonment of exchange-rate pegging, coupled with a sharp jump in short-term interest rates (they exceeded 70% by March 1995) and a tight fiscal policy. Liquidity came from the international “powers” that came to rescue. The IMF provided \$ 17.8 billions and bilateral commitments up to \$ 21 billions. The International Bank for Reconstruction and Development (IBRD) together with the Asian Development Bank (ADB) provided another \$ 2.8 billions. The total amount including \$ 10 billions BIS – G10 commitment that was not activated totaled to \$ 51.6 billions.

The abovementioned actions made possible for Mexico to cover a large part of the capital outflows, the redemption of foreign-held Tesobonos, and the partial replenishment of the country’s depleted foreign-exchange reserves.

The combined effects of the measures taken were spectacular. Initially, there was a sharp recession with a steep decline in real wages, mass unemployment, and a drop of more than 10% in industrial production. Not long after, the peso stabilized, the initially sharp rise in inflation abated, and the trade balance swung into surplus. Industrial production started rising from the late summer 1995 onwards, and by late 1996 exceeded the precrisis peak.

To cut a long story short we need to see figure 1:



The Nordic banking crises

In early 1990s all major banks in the Nordic (Norway, Sweden, Finland) countries got into serious trouble and made huge losses. Average loss provisions as percentage of lending were doubled or even tripled (Møller and Nielsen 1995).

In order to understand the origin of the Nordic banking crises we need first to examine the reasons behind them.

First, financial market deregulation led to an explosion of domestic bank credit (diagram 1). The process of deregulation was not carried out in the most appropriate way. Following the financial deregulation, banks had to adjust to a new regime of price competition instead of competition with service provision in the regulated era. The new areas of competition led to increased risk-taking as a result of moral hazard and myopic behavior.

Second, freeing of international capital movements led to a huge increase in capital inflows, a significant fraction of which was denominated in foreign currencies and not hedged. Restrictive monetary policy accentuated the capital inflows as a result of the interest rate differential between domestic and foreign interest rates and partly because investors perceived a small likelihood of loss from exchange rate movements.

Third, a sharp increase in the terms of trade resulting from a falling energy prices and a rise in world market prices of forest products contributed to the overheating of the economy that was already fuelled by the financial deregulation. The business cycle was in an upswing in many countries, partly as a result of the loose monetary policy after the 1987 stock market crisis. This added to the bad luck of overheating that Finland and Sweden had been experiencing since the second half of the 1980s. Domestic economic policies were not sufficiently restrictive to counteract the boom (diagram 2).

The overall developments in the Norwegian and Swedish crises were similar to those in Finland. However, for Norway the major fall in oil prices in 1986 operated like a buffer preventing a longer-lasting boom and a correspondingly bigger bust.

The factors that contributed to the onset of the crises in Finland and Sweden were both international and domestic. First, Finish exports declined as a result of slow international growth, loss in the price competitiveness of the industry, and a decline in the terms of trade. Moreover, because of the collapse of the former Soviet Union exports plumped after 1991.

Second, after the German unification, interest rates rose in Europe and in Finland as a result of more expansive fiscal policy combined with tighter monetary policy in Germany (diagram 3). Third, monetary conditions became very restrictive due to an increase in real interest rates and appreciation of the Finnish currency.

The same applied to Sweden with one major difference since Sweden had little trade with the Soviet Union.

The deregulation process was problematic in several respects. First, the timing in the second half of the 1980's coincided with the upswings of business cycles in Western market economies. The big boom led to soaring indebtedness in the private sector, higher relative unit labour costs, and a current account deficit (diagram 4). Later on, it led to speculative attacks on the Finnish currency.

Second, the prevailing banking law from 1969 was outdated and bank supervision focused solely on legalistic monitoring of banks. The rules and practices in prudential regulation and bank supervision were left unchanged in the deregulation process. They were tightened only later in 1991, when the depression had already begun.

Third, the tax system favoured debt financing of business and housing investment and it was reformed only later. Some reforms were attempted during the boom years but there was little political support for the reform proposals.

Fourth, in the context of deregulation, lending rates were liberated before deposit rates, which also helped to ease the banks' position.

Finally, monetary policy under a fixed exchange rate with a narrow band tried to maintain some tightness in the wake of the boom. This provided further impetus to the large (in foreign currency terms) inflow of foreign capital. The capital inflows to private sector were mediated largely by Finnish banks and led to foreign-currency denominated borrowing also by firms operating in the non-tradable sector.

The financial crisis had also an international dimension for Finland and Sweden. For both countries problems of international indebtedness and illiquidity emerged as a result of an earlier real appreciation and lending boom after financial deregulation.

The Nordic banking crises required major policy interventions by the governments while many of those interventions had to get parliament authorization in order to establish broad political consensus.

Policy actions to overcome the Finnish banking crisis began in September 1991 when the Bank of Finland had to take control of Skopbank, the 'central bank' of the Savings bank system as other banks refused accept certificates by Skopbank.

Further policy measures were initiated in early 1992. The government injected public funds, in the form of preferred capital certificates, into the banking system and set up a Government Guarantee Fund (GGF) to manage the banking crisis. Tight conditions were imposed on the public support to the banks as the capital certificates could be converted into voting stock if certain conditions about repayment and bank solvency were not fulfilled. Moreover, the interest rate on the certificates was set slightly above the market rate.

Correspondingly, further GGF actions included strict requirements on the banks including transparency of support, monitoring of banks receiving support, terms to support efficiency and structural adjustment of the banking system, and (in varying degrees) financial responsibility of owners of banks receiving support.

As the crisis continued, the government (in August 1992) and the Parliament (in the beginning of 1993) made public promises that the obligations of the Finnish banking system would be guaranteed under all circumstances.

Improved efficiency of Finnish banks was mainly achieved through a series of mergers. As a result of all the restructurings about 60% of the Finnish banks is nowadays owned by foreigners.

The banking crisis in Sweden erupted in the autumn 1991, starting with the largest savings bank, Första Sparbanken. The Swedish government provided a lending guarantee to the owners of the bank. The bank was later merged into the Savings Bank of Sweden, together with several other savings banks. The second troubled bank was Nordbanken, the third largest commercial bank (the Swedish government owned 71% before the crisis). The government guaranteed a share issue and increased its share in the bank. Existing shareholders were not penalized in this process. Restructuring of Nordbanken was carried out, including transfer of bad assets to a separate asset management company.

In spring 1992 Gota Bank, the fourth largest commercial bank got into difficulties and was assessed not to be viable. In 1993 it was merged with Nordbanken and in this operation the shareholders of Gota Bank received nothing!

The Swedish crisis was treated in an ad hoc manner until summer 1992, but with increased turmoil the crisis was deemed systemic. Most banks, representing 90% of all bank assets, incurred heavy credit losses. In the autumn 1992 the Swedish government introduced several measures to deal with the crisis. A blanket creditor guarantee was issued, Riskbanken, the central bank, provided extensive liquidity support through its currency deposits in the banks and lending facilities. A crisis resolution agency was set up to

implement public support to the banking system. Bank support was provided in a transparent manner. It was open to all banks and the criteria were the same for different banks. The terms were strict with requirements for risk reduction, cost-cutting, and improved efficiency.

The crisis in Norway began in the third quarter of 1988 when a medium - sized commercial bank suffered large loan losses. Shortly after, two savings banks had capital problems. The situation deteriorated when in 1989 – 1990 more savings banks were in need of capital. Initially, two private guarantee funds ejected capital to those banks which were later merged into other banks. By late 1990 the private guarantee funds had used most of their resources and in January 1991 the government established the Government Bank Insurance Fund (GBIF) with capital of 0.6% of 1991 GDP. Initially, GBIF provided additional funds for the private guarantee funds but, with continuing bank difficulties, injections of solvency support directly to problem banks became necessary.

GBIF provided huge capital infusions to these banks under strict conditions, and by the spring 1992 all three banks were nationalized and the value of old shares was written down to zero! The government also had to take some other measures during the crisis. A blanket guarantee of the banking system was not made, though specific announcements about securing confidence in the Norwegian banking system and about securing depositors and creditors of Christiania Bank (the 2nd largest bank) were made.

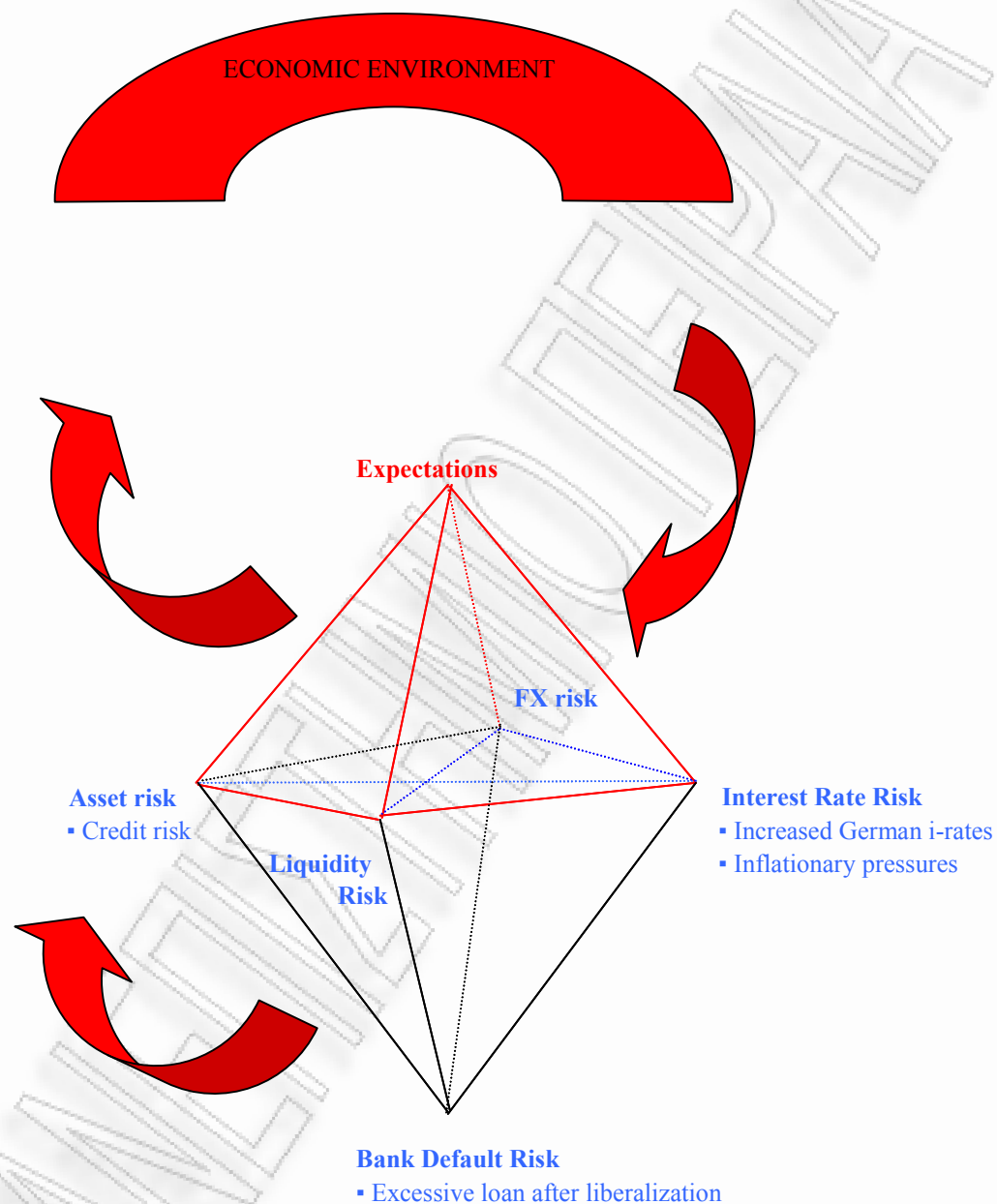
A remarkable feature of the nationalization and privatization process has been that, due to increases in share prices, the Norwegian tax payer has in the end been a net beneficiary in the crisis, i.e. the bank support has been more than covered from the sale of the nationalized banks! Somewhat similarly, the final net fiscal cost of the Finnish and Swedish banking turned out to be significantly smaller than the gross costs due to the re-sale of assets held by the public asset management companies!

Concluding, it is a common sense that preventing a financial crisis should be a priority. Stability-oriented macro policies that avoid inflation and overheating are crucial in crisis prevention. The difficulty is how to diagnose an emerging overheating situation and an asset price bubble as not all business-cycle upswings, with major asset price rises, lead to a systemic financial crisis.

In the case of the Nordic banking crises, it is likely that both resistance of special interest groups and lack of understanding of the changing economic environment made the path easier for the eruption of the crises. Fortunately, crisis management by the Nordic countries was not far from best practice. As emphasized by Allen and Gale (1999, 2007),

the impact of banking collapses in the three countries were short-lived, the economies recovered fairly quickly and economic growth resumed.

As with the case of Mexico, figure 2 gives us a quick understanding of the situation:



In the case of the Nordic banking crisis the impact of expectations was minimized because there were no bank runs. The underlying reasons behind that were 1) immediate and decisive action from the authorities 2) a blanket government guarantee 3) transparency played an important role in restoring confidence 4) broad political consensus 5) financial innovation and integration had not evolved so much at the time.

The Asian crises

A series of financial crises in Asia, of unanticipated intensity and power of contagion, dominated developments in the emerging market economies in 1997 – 1998. In those most adversely affected – Indonesia, Korea, Malaysia and Thailand – activity and demand slowed sharply in the face of eroded confidence.

An intricate and often opaque combination of macroeconomic distortions and financial fragility has been at the core of the crises in East Asia. Growing awareness of these vulnerabilities, and the difficult challenge of addressing them through conventional policy measures, not only amplified the downward pressure on exchange rates when confidence broke, but also cast a large shadow over the prospects for engineering a quick recovery.

A fragile financial sector, weak supervision and prudential regulation, and a corporate sector burdened with high levels of short-term debt were at the heart of a series of crises in Asia in the second half of 1997. In particular, they greatly increased the complexity of managing in a sound and productive manner the foreign funds that surged into Asia in the mid-1990s.

Two of the macroeconomic factors that, ironically, received much of the praise for fuelling the dynamism of the Asian economies in the 1980s and the first half of the 1990s also played a crucial role in provoking the sudden loss of confidence. These were the heavy build-up of capacity in a number of sectors and the impact of the chosen exchange rate regime on both trade competitiveness and the stance of monetary policy.

The economic performance of the emerging market countries in Asia has been impressive since the early 1980s. Average annual growth rates of 7.1.2% since 1980 have been combined with modest inflation, with much of the growth momentum coming from the increasing openness of most economies. This striking performance was achieved while keeping macroeconomic policies on a prudent course. Fiscal outcomes tended to be broadly balanced while reasonable price stability suggested cautious monetary policy. Even though current account imbalances widened to levels that would be considered alarming in more consumption-prone countries, the association of these imbalances with high investment spending by the private sector and rising shares of saving in GDP fed the perception of robust and sustainable growth.

These strong macroeconomic features were shared equally by the countries that were particularly hard hit during the period of financial turmoil. In retrospect, however,

they can be seen to have masked the fact that systems of governance in the corporate, financial and government sectors failed to keep pace with a rapidly expanding economy, and that investment strategies increasingly focused on areas with less solid risk-to-return characteristics.

Overinvestment in particular sectors has tended to erode the rates of return on new capital in recent years. A second major underlying cause of the regional crisis has been the increasing difficulty of maintaining exchange rate policies based on a close peg to the US dollar. The position regarding the exchange rate had three unwelcome implications. First, the depreciation of the US dollar against the major international currencies up to the first quarter of 1995 gave a false impression of a steady gain in competitiveness. A further implication of managed exchange rate regimes in Asia has been the reduced ability of monetary policy to focus more directly on the liquidity requirements of the domestic economy. As overheating became apparent in many of the Asian economies in the mid-1990s, exchange rate commitments prevented central banks from raising interest rates to cool domestic demand, in particular investments in real estate and projects with inherently low rates of return. Finally, a third consequence of a long period of relative stability against the US dollar has been the blunting of perceptions of exchange rate risk and the resulting incentive to take large unhedged exposures in foreign currency.

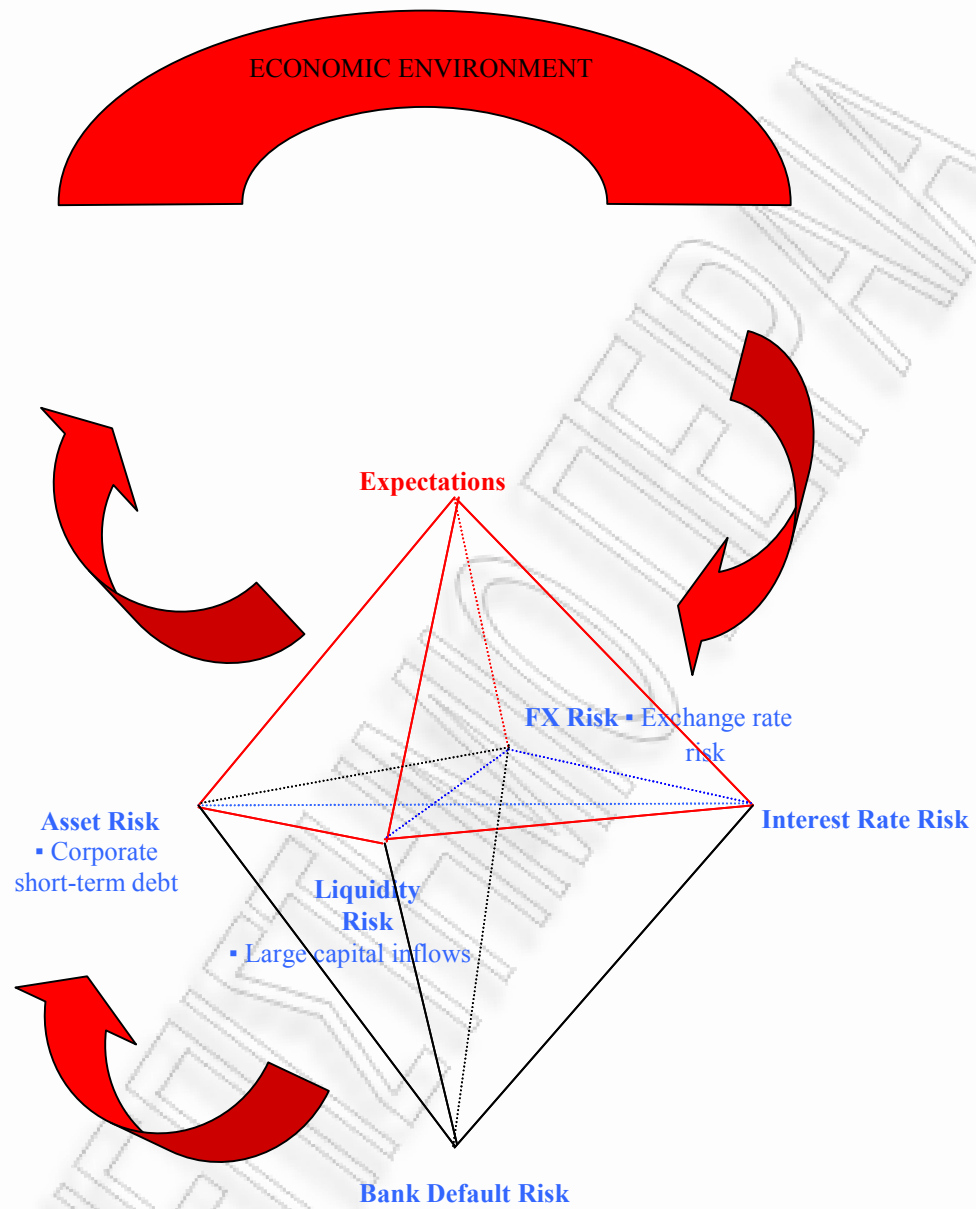
The depth of the crisis which unfolded in Asia in the second half of 1997, and the speed of contagion, came as a surprise to most observers and participants. Strong speculative pressure began to mount against the Thai baht in early 1997 and, by mid-year, could no longer be resisted. Given shared vulnerabilities, turbulence quickly engulfed several other South-East Asian economies, in particular Indonesia, Malaysia and the Philippines. As the year went on, the loss of confidence spread further, dragging Korea into a deep financial crisis in the final months of 1997.

A number of common elements have marked the responses of policymakers to the crisis which, in Indonesia, Korea, the Philippines and Thailand, were formulated in the context of an IMF programme and were backed with official credits. First, in all directly affected countries, floating exchange rate regimes had to be adopted soon after their currencies came under attack. Very sharp exchange rate adjustments ensued which contributed to pushing real exchange rates well below the trends seen over the past decade. Exchange rate overshooting is likely to have occurred and may have complicated adjustment by creating price distortions and paralysing corporate and financial activity.

A second common feature has been the tightening of monetary policy throughout the region, although the stage at which this tightening was implemented and the determination with which it was applied varied significantly. To a large extent, differences reflected varying degrees of reluctance on the part of the authorities to aggravate, through high interest rates, the financial position of already vulnerable financial and corporate sectors. However, such policy wavering may well have added to the downward pressure on the exchange rate, thus propagating financial distress via the exchange rate channel. Initially, commitments to fiscal restraint were also made, but, as the depth of the crisis became clearer, fiscal stances generally eased.

Finally, in recognition of the structural weaknesses at the core of the sudden loss of confidence, adjustment programmes included unprecedented degrees of institutional and structural reform, both in the financial and in the enterprise sector.

Figure 3 will again provide an overview:



The current crisis

During the current global financial crisis, failures have surfaced in macroeconomic policies and the regulation and supervision of banks and non-banking institutions. It is now clear that agencies involved in regulation, supervision, and crisis management did not always have clear mandates and tools commensurate with these mandates, and that there was a lack of international consistency and coherence of policies. The global financial crisis has also led to a reconsideration of the benefits and costs of open financial markets, leading to calls for a reassessment of the global financial architecture.

The severe financial crisis that has gripped the global economy reflects a remarkable confluence of factors. Some are very reminiscent of past bouts of financial turmoil, others are new but analyzing the path of evolution, not surprising.

Some features are common with past crises: 1) asset bubbles; 2) credit booms; 3) marginal assets and systemic risk; 4) regulation and supervision. The current financial crisis presented some new dimensions: 1) increased opaqueness; 2) financial integration and interconnections; 3) the role of leverage; 4) the role of households.

House prices sharply increased in the U.S. and other markets prior to the current crisis (diagram 5). Moreover, the patterns of asset prices in this episode are reminiscent of those in other major financial crises episodes. The overall size of the U.S. housing boom and its dynamics—including rising house prices in excess of 30 percent in the five years preceding the crisis and peaking six quarters prior to the beginning of the crisis—is remarkably similar to house prices developments in the previous (Big 5) banking crises in advanced economies (Finland, 1991; Japan, 1992; Norway, 1987; Sweden, 1991; and Spain, 1977), as observed by Rogoff and Reinhart (2008). House prices rose rapidly in many countries now caught in the financial turmoil, including the U.K. and Iceland. These housing booms were generally fuelled by fast rising credit resulting in sharply increased household leverage (diagram 6).

While aggregate credit growth in the U.S. was less pronounced compared to previous episodes reflecting slower corporate credit expansion, household debt increased sharply. The increased leverage left households vulnerable to a decline in house prices, a tightening in credit conditions and a slowdown in economic activity. Similar patterns existed in several current crisis countries. The mechanisms linking credit booms to crises include increases in leverage of borrowers (and lenders) and a decline in lending standards (diagram 7).

The boom in household credit was associated with the creation of marginal assets whose viability relied on continued favourable macroeconomic conditions. In the U.S. a large portion of the mortgage expansion consisted of loans extended to subprime borrowers with limited credit and employment histories. This maximized default correlations across loans, generating portfolios highly exposed to declines in house prices. Elsewhere, a similar pattern led to large portions of domestic credit denominated in foreign currency. As with U.S. subprime loans, this meant high default risk correlations across loans and systemic exposure to macroeconomic shocks.

On the back of fragile housing and corporate financing markets, derivative markets in many forms expanded greatly (mortgage-backed securities and collateralized debt obligations). The pricing of these instruments was often based on a continuation of increasing house prices that facilitated the refinancing of underlying mortgages. The corporate credit default swap market also expanded dramatically on the back of favourable spreads and low volatility.

As we saw earlier, past crises often followed expansions triggered by financial liberalization not accompanied by necessary regulatory reforms and supervisory enhancements. In this crisis, although perhaps in more subtle forms, regulatory approaches to and prudential oversight of financial innovation were insufficient as well. As in the past, but this time in advanced countries, finance companies, merchant banks, investment banks and off-balance sheet vehicles of commercial banks operated—to varying degrees—outside banking regulations. But as this “shadow banking system” provided increasingly important avenues for intermediation, it grew without adequate oversight and led to systemic risks. Regulators also underestimated the conflict of interests and information problems associated with the originate-to-distribute model. Not only did this harm consumers of financial services, but it also created the potential for chain reactions leading to systemic risk. As happened often before, the focus of authorities remained primarily on the liquidity and insolvency of individual institutions, rather than on the resilience of the financial system as a whole.

In part by being inadequately regulated, the increased recourse to securitization (diagram 8) and the expansion of the originate-and-distribute model exacerbated agency problems. The progressive expansion of more opaque and complex securities and the increasing delinking between borrowers and lenders worsened agency problems. Risk assignments became increasingly unclear and incentives for due diligence worsened, leading to insufficient monitoring by loan originators and an emphasis on boosting volumes

to generate fees. The distribution model led to widespread reliance on ratings for the pricing of credit risks, with investors often unable or unwilling to themselves fully assess underlying values and risks. With deficiencies in the rating process, this led to inflated and less informative risk ratings and masked the extent of risk exposure in certain institutions, such as insurance companies, that are perceived to be more prudent than others.

Increased balance-sheet opaqueness and reliance on wholesale funding increased the degree of systemic fragility. The increased opaqueness of balance sheets made it difficult to separate healthy from unhealthy institutions. The resulting adverse selection problems contributed to the freezing of the interbank markets and forced further sales of securities to raise funds.

Financial integration has increased dramatically over the past decade, especially among advanced economies. Capital account openness and financial market reforms have led to massive increases in cross-border gross positions, especially among OECD countries (diagram 9). Increasing interconnection of financial institutions and markets and more highly correlated financial risks intensified cross-border spillovers early on through many channels—including liquidity pressures, global sell-off in equities, and depletion of bank capital.

The increased connections and simultaneous build-up of systemic risks across multiple countries made the management of shocks more complex, especially in light of institutional deficiencies in many countries—including the inability to resolve quickly large, cross-border financial institutions, and led to a rapid spreading of turmoil globally (diagram 10). The crisis was also the spark that triggered the unwinding of imbalances in other countries. Benign financial and macroeconomic conditions—notably, low interest rates and narrower risk spreads—had prevailed on a global basis and, alongside this, booms had taken place in many economies.

The build-up of an unusually high degree of leverage of financial institutions and borrowers contributed to the propagation of shocks (diagram 11). This high leverage limited the system's ability to absorb even small losses and contributed to the rapid decline in confidence and increase in counterparty risk early on in the crisis. As financial institutions incurred large losses and wrote-down illiquid securities, solvency concerns across markets fuelled a process of rapid deleveraging and forced asset sales.

Problems in the household sector have played a more prominent role in this crisis than in previous crises. Most previous episodes of financial distress stemmed from problems in the official sector (e.g., Latin America's debt crisis of the 1980s) or the

corporate sector (e.g., the Asian crisis). The origins of the current crisis, however, have much to do with overextended households, in particular through non-traditional mortgage loans and especially in the U.S (diagram 12).

As in any financial crisis, there are catalysts, triggers, and amplification mechanisms beyond the underlying causes. The catalyst of the crisis was the overextended U.S. housing and mortgage markets. Trigger was the turnaround in U.S. house prices, in part related to a cycle of monetary policy tightening, with the subprime sector as the main initiator of subsequent turmoil. Surprising was the degree and speed of global spillovers, which happened in several phases and through various amplification mechanisms (diagram 13).

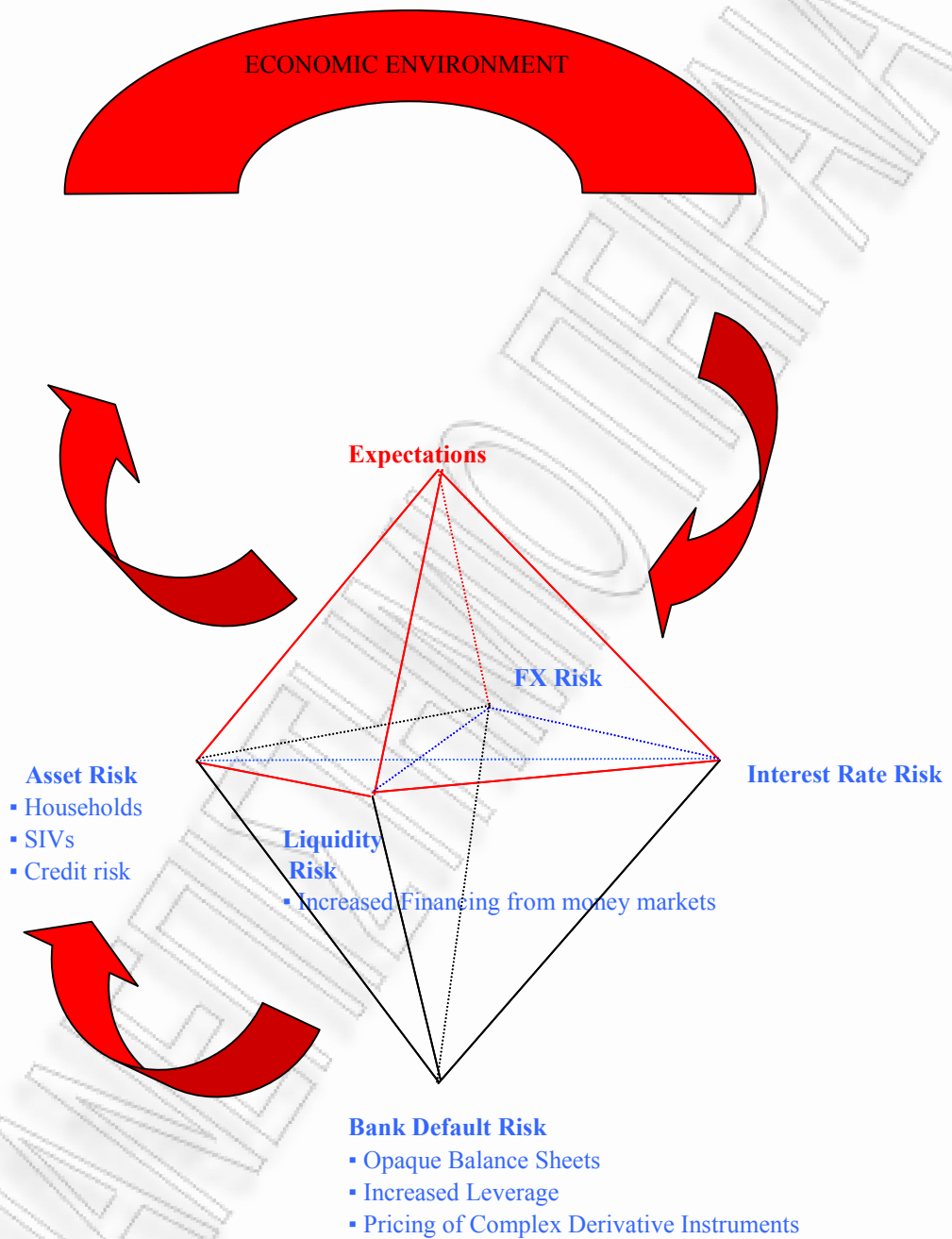
The first phase was through direct exposures to subprime related assets (in Germany IKB, July 2007 – in France BNP Paribas, August 2007 – in the U.K. Northern Rock, fall 2007). A second phase of international spillovers was transmitted through asset markets. In terms of crisis response, as in past events, it proved difficult to get ahead with a fast evolving situation to contain the financial turmoil and reduce the impact on the real economy. The unprecedented and numerous efforts were unable to remedy the underlying problems that led to a near complete breakdown in market trust and confidence. The third phase occurred through large solvency concerns following the collapse of Lehman Brothers. In October 2008, solvency concerns affected systemically important global financial institutions, leading to massive sell-offs, risking a financial meltdown.

Compounding the problem, recognition of insolvency problems was delayed and resolution frameworks proved haphazard in practice. Disappearing market confidence and eroded trust required authorities to intervene in a number of cases, with unprecedented means. In this phase, global transmission channels were multiple, including through banks and non-bank financial institutions rapidly deleveraging. Insurance giant AIG nearly collapsed before receiving substantial public rescue funds.

The crisis has prompted large government interventions, both to restore confidence in the financial system and to contain the fallout of the crisis on the real economy (table 6). The principal forms of intervention were: (i) liquidity provision through collateralized lending and other schemes; (ii) support for short-term wholesale funding markets; (iii) (more extensive) guarantees of retail deposits and other liabilities; (iv) purchases or exchanges of non-performing or illiquid assets; and (v) capital injections to banks. These interventions were necessary but are distortive by nature. Unfortunately, few actions were

internationally coordinated and most government interventions to date have been at national levels.

Let us have a short look to figure 4:



РАМЕТЪМО РЕПАА

CHAPTER 4

LESSONS AND CONCLUSIONS

The Mexican Crisis

There are certain lessons from the crisis in Mexico that we need to focus to. Mexico's crisis has been described as the first financial crisis of the 21st century, meaning the first major financial crisis to hit an emerging market economy in the new world of globalized financial markets. The increasing international integration of financial markets in the past 10-15 years has brought great benefits, by fostering a more efficient allocation of global savings and boosting investment and growth in many countries. But there is a downside: vastly increased financial flows across national borders have also made countries that participate in international financial markets more vulnerable to adverse shifts in market sentiment: such shifts, though generally related to concerns about economic fundamentals and policy shortcomings, can often be delayed, sudden, massive, and destabilizing. Furthermore, financial globalization has increased the speed with which disturbances in one country can be transmitted to others. So financial globalization, though both a product of and a contributor to the economic progress of our time, has heightened the challenges of preventing and resolving financial crises.

And it is no accident that this crisis hit one of the most successful developing economies. An essential ingredient in the success of Mexico in the past decade--as with all other successful developing economies--has been its increased openness to the world economy and integration into international financial markets.

Thus, as we said at the beginning, the challenges that now have to be addressed are to a large extent a consequence of economic progress. And it would be an egregious mistake to seek to prevent financial crises by reverting to a closed economic system with exchange controls and less open markets: to do this would be to try to turn the clock back and forego the benefits of globalization. This is well understood by the Mexican authorities, who quite appropriately have been addressing Mexico's problems without resorting to that approach again.

So, how should the challenges of financial crises be addressed? What are the lessons from Mexico about the conduct of economic policy, the role of the IMF, and international cooperation more generally?

As regards economic policy, I would emphasize four lessons. First, openness to international financial markets today imposes an obligation of unflinching discipline on

economic policy. Vigilance and discipline provide the most effective deterrent and defence against financial market setbacks. Mexico's crisis demonstrated impressively the costs that can arise when a country lowers its guard and allows markets to exercise their discipline instead. A similar lesson was shown, for instance, by Argentina's very quick reaction to the crisis. By transforming the crisis into an opportunity to address in depth the worrying signs of weakness in its provincial banks, Argentina, with strong support from the IDB, World Bank, and IMF, has paid a great service not only to itself but to the Americas and the world at large. With the situation under control in Mexico and Argentina, the systemic risk was well-contained.

Second, large external current account deficits are dangerous, especially when they are being used to support domestic consumption and are being financed by short-term capital inflows. They are dangerous because they are not likely to be sustainable. This applies even when, as in Mexico's case, the fiscal position is strong and the external deficit largely reflects weak private sector saving. With the benefit of hindsight, Mexico's fiscal position should have been even stronger, to contain the country's dependence on easily reversible capital inflows.

Third, Mexico's devaluation in December illustrates not only that it is inherently difficult to adjust a pegged exchange rate even when such a change is called for, but also that sound and credible accompanying macroeconomic measures are essential to provide a firm basis for market expectations and to make the new exchange rate sustainable.

Finally, Mexico's crisis illustrates the costs of failure to publish regularly and in good time information about key economic indicators. The crisis arose in the way it did partly because the scale of the problem only became apparent at the time of the devaluation, and took the financial markets by surprise. If information about international reserves and other key variables had been published more frequently and with a shorter time lag, the efficiency of market discipline and the chances of a smoother adjustment would clearly have been enhanced.

The Nordic Crises

We will focus our analysis here on Finland and Sweden since the Norwegian crisis was less severe as Norway did not experienced any significant period of negative growth. Finland and Sweden were economic twins in the sense that they followed the same economic path during the last quarter of the 20th century. They were hit simultaneously by a crisis that

was the most severe during the post-World War II period. The anatomy of the crisis was identical in the two countries. The financial deregulation of the mid-1980s, while both countries were on pegged exchange rate regimes, was the starting point for the boom-bust cycle. First, it contributed to low real rates of interest and rapid growth in the volume of credit, thus creating a boom at the end of the 1980s. Next, the credit expansion was broken and both the Finnish and the Swedish economy ended up in deep crisis. The domestic crisis in combination with the unrest on the European currency markets spelled the end of the pegged exchange rate policy in the fall of 1992.

The financial liberalization undermined eventually the pegged rate regimes in Finland and Sweden. This is clear illustration of the view that a pegged exchange rate, international capital mobility and monetary policy sovereignty do not mix, commonly described as the macroeconomic policy trilemma for an open economy.

The crisis was a balance-sheet crisis as changes in interest rates, in asset prices and in wealth played a central role in the process of boom and bust. Irving Fisher's theory of debt deflation provides a fruitful approach for analyzing the sequence of events leading to the crisis. The crisis was triggered by an increase in the real rate of interest through a rise in the international interest rate level, tighter domestic fiscal and monetary policies, changes in the tax system pertaining to the payment of interest rates and falling inflation rates. High after-tax real interest rates undermined the value of the assets of households and corporations, creating a process of falling asset prices. This, in turn, led to severe problems in the financial system and large budget deficits as the governments were forced to socialize the losses caused by the debt deflation process.

Why was the crisis allowed to become so deep? One contributing factor was the lack of accurate forecasts and analyses of the effects of financial deregulation in an open economy. The macroeconomic consequences of falling asset prices were not understood by policy-makers. They were unaware of the chain of events they had unleashed. In hindsight, the severe underestimation of the impact of disinflation on portfolio balances and on asset behaviour, aggregate demand, investment and savings and the consequent fall in production was a major error by forecasters, policy-makers and economists prior to and during the crisis.

This lack of knowledge is easy to explain. Pre-crisis macroeconomic thinking in Finland and Sweden was strongly dominated by the Keynesian approach with its stress on flow concepts and disregard of financial variables and balance sheet developments. An analysis of balance sheet imbalances moves the focus from aggregate flows to financial stocks such as the assets and liabilities of households and firms. The disregard of the role of

portfolio imbalances was largely due to the system of heavy regulation of the financial system in Finland and Sweden that was in place during the post-World-War-II period up to the financial deregulation in the mid-1980s. As financial markets were held dormant, knowledge of the effects of financial forces became weak.

The defence of the pegged exchange rate was initially strong and stubborn. The broad political consensus of defending the peg was a reaction to the devaluation policies of the 1970s and 1980s. The goal of the hard currency policy was to avoid a new devaluation cycle with high inflation rates. Eventually, both countries had to give in and let their currencies float. The recovery was then driven by falling interest rates and a strong rise in exports due to the depreciation caused by the floating. Unemployment remained high for many years after the crisis.

As a result of the experiences from the crises, both countries reformed their institutional systems for pursuing stabilization policies and introduced more independent central banks. Both countries announced an inflation target for monetary policy. In January 1999 Finland joined the euro area. Sweden has so far chosen to remain outside with its own inflation target. The inflation rate has been kept at low levels in both Finland and Sweden, significantly lower than the inflation rates of the 1970s and 1980s. It remains to be seen whether Finland and Sweden - after Sweden's decision in September 2003 to remain outside the euro area - will evolve along significantly different macroeconomic paths. Have the two economically identical twins separated, after having followed roughly the same stabilization policy road during the post-World-War-II period? The future will tell.

The Asian Crises

Two weaknesses were common to the countries engulfed in the Asian crisis. The first was that excessive expansion of bank credit fuelled overinvestment, leading to the creation of unprofitable industrial capacity and asset price boom-and-bust cycles. The underlying fragility of financial systems in Asia was often overlooked because a high degree of monetary and exchange rate stability, allied with the rapid development of local banking systems, facilitated a long period of investment-led growth. Many years of virtually uninterrupted growth led banks and others to underestimate the risks that were emerging as a new, less regulated and more open environment took shape and as economies became more developed. Expectations that governments would support major financial institutions probably also contributed to this behaviour. Except in Hong Kong, the

Philippines and Singapore, capital ratios were generally kept too low to provide an adequate cushion in the event of trouble. Finally, policy-makers failed to realise not only how vulnerable their banking systems were becoming to any appreciable slowdown in growth, but also how the defence of a dollar peg was becoming more demanding with more open capital markets and with the yen/dollar exchange rate moving widely.

The second, and in many ways related, weakness was a reliance on potentially volatile forms of external finance, notably short-term bank borrowing and current account deficit, which made domestic economies increasingly vulnerable to swings of sentiment in the international financial markets. Several countries had to cope with heavy capital inflows for much of the 1990s. Investors' confidence was not at first weakened by rising external indebtedness: risk spreads on Asian emerging market bonds narrowed significantly during 1996 and much of 1997 and there were few downgrading of credit ratings before the crisis. Official surveillance of countries' performance also failed to identify fully the dangers many Asian economies faced. Once the crisis broke, however, markets panicked: exchange rates and equity markets overshot; volatility rose dramatically, with liquidity in some markets drying up; and the credit-rating agencies downgraded the countries most affected.

Policy-makers confronting this crisis faced many difficult dilemmas. The question of how best to deal with sudden and disruptive reversals of private capital flows is a particularly thorny problem. As the scale of international official assistance set new records, the issue of how to hold private investors responsible for their decisions and ensure they bear a share of the costs of emergency assistance to countries in trouble received much attention. How to set monetary policy in the immediate aftermath of a collapse of confidence in the domestic currency was also a source of controversy as the crisis unfolded. Finally, a major restructuring of the domestic banking system occurred.

The current episode

The global financial crisis is still evolving. The financial turmoil and the rapid economic slowdowns in advanced countries continue to affect global markets. Continued turmoil means extraordinary government interventions will continue and the international rules of the game will remain in flux.

Governments also need to plan for exit from the large-scale government intervention packages that have been put in place, but need to do so allowing for a sustainable recovery of economic growth and financial stability. These are difficult processes, many

unprecedented, especially so in the context of highly integrated financial systems, and requiring all some coordination. It is clear, however, that lack of coordination can create new distortions.

The crisis has reopened the debate on whether macroeconomic policy should be concerned with asset price booms and increases in leverage. It has highlighted, in abundantly clear ways, the deficiencies in national financial regulation and supervision and shown how the international financial architecture has fallen behind a rapidly integrating international financial system.

The crisis has forced central banks to extend their traditional role of lenders of last resort. They extended their liquidity support to non-deposit-taking institutions and intervened directly (with purchases) or indirectly (through acceptance of the assets as collateral) in a broad range of asset markets.

Regulatory shortcomings have clearly been a key contributory factor to the global financial crisis. Actions are generally recognized as required in the five general areas: 1) *Regulatory perimeter*: The regulatory, supervisory, and information perimeter needs to be broadened to ensure that all financial activities that pose systemic risks are adequately captured; 2) *Micro-prudential regulation*: Capital regulation, and liquidity and risk management need not only to reflect individual institutions' risks but also their potential to form systemic risk; 3) *Macro-prudential regulation*: Regulatory approaches that better dampen the procyclicality of financial markets need to be designed; 4) *Information and market discipline*: Information disclosure and corporate governance practices need to improve to enhance market discipline; and 5) *Organization of regulation and supervision*: There is a need for greater coordination within and across countries in both the design of regulation and the monitoring of systemic risk.

The following four key principles are recognized as essential guides to these redesigns. First, the perimeter of regulatory and supervisory arrangements should be drawn to address concerns over systemic risk and be compatible across jurisdictions, institutions, and activities. Second, regulations need to be incentive compatible, across institutions and over time, while balancing possible adverse impacts on innovation and efficiency. Third, market discipline and supervision should complement each other. An enhanced disciplinary role of markets requires allowing for the failure of individual institutions. Fourth, the redesign of financial regulation needs to be aware of and seek to overcome its inherent limitations.

Many international financial architecture changes are needed, including some regarding surveillance of financial risks and vulnerabilities. The crisis has made clear the enormous costs of not identifying risks early enough. Obtaining better information will in turn be another essential step. An improvement in the assessment of risks also means strengthening macro-financial analysis and work on early warning systems.

Early warning and surveillance work by multilateral agencies will need to improve and balance voluntary engagement in assessments with mandatory compliance.

Change in international financial governance and representations in both rule making and decision making bodies (Financial Stability Board, Basel Committee on Banking Supervision, International Monetary Fund, etc.) will be needed to make this effective.

Better cross-border crisis management arrangements are also sorely needed. Improvements are also needed in the area of cross-border banking resolution. Importantly, improved crisis management will require better international liquidity provision, to both financial institutions and countries, to prevent spillovers from becoming solvency issues.

Vested interests in the financial services industry are large in most countries and political lobbying will therefore be a key determinant of the final outcome of this process. Intense efforts by the financial industry to protect these interests can create obstacles to implementation of the necessary reforms.

While there are many lessons for financial reform going forward, as summarized in this paper, there remain many unknown areas where further policy research would be useful. These include such areas as competition policy for a stable financial system, approaches to consumer protection in financial services, and the political economy of financial regulation, financial openness, and financial crises. As we said at the beginning, one thing is certain: Absolute answers and easy solutions exist only in our imagination.

CONCLUSION

Financial crises do not just happen. Financial fragility or, more precisely, periods of financial exuberance followed by episodes of financial distress have been integral to the working of market economies since time immemorial. They are the result of imbalances which sometimes are global. Macroeconomic mismanagement, dysfunctional financial intermediation, lack of timely information, inadequate banking and financial markets supervision, mishandled capital account liberalization and domestic regulation, inappropriate exchange rate regimes, unexpected political shocks are only some of the reasons behind financial crises. Each has played at times, and in varying combinations, a crucial role in aggravating the crises and their impact on the real economy.

Moreover, the process of globalization makes our financial world a more risky place to live in. This applies without doubt to all emerging markets which have joined or will join the global village. As the current crisis clearly demonstrates it also applies to developed countries. The global nature of the crisis has shown that financially integrated markets, while offering benefits in the long run, pose significant short-term risks, with large real economic consequences, and that reforms are necessary to the international financial architecture to safeguard the stability of an increasing integrated global financial system. Governments, central banks, and regulatory agencies will have to set up a well-structured, efficient, and cooperative framework at a global level. Establishing such a framework should therefore be the major assignment for all those who are given the task of designing a new financial architecture.

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TABLES AND DIAGRAMS

Table 1

Mexico: Current Account Balance

Balance as % of	1990	1991	1992	1993	1994	1995
GDP	-3.0	-5.0	-7.3	-5.8	-7.0	-0.6
Exports of goods & nonfactor services	-15.3	-28.4	-44.1	-38.1	-41.7	-1.8

Source: IMF Balance of payments statistics and IMF international financial statistics

Table 2

Mexico: Balance of payments
(in \$ billions)

	1990	1991	1992	1993	1994	1995
Current account balance	-7.4	-14.6	-24.4	-23.4	-29.7	-1.6
Net private capital inflows	5.8	19.9	23.5	30.2	10.3	-13.3
Net official capital inflows	5.0	2.4	2.0	-0.9	0.9	24.5
Net change in external reserve position	3.4	7.7	1.0	5.9	-18.4	9.6

Note: Capital flows are calculated as the difference between the current account and the change in reserves; private flows are calculated as a residual from an estimate of official flows.

Source: IMF Balance of payments statistics and Institute of International Finance

Table 3

Mexico: Main components of Private capital inflows

(in \$ billions)

	1990	1991	1992	1993	1994	1995
Foreign direct investment	2.6	4.8	4.4	4.4	11.0	9.5
Portfolio						
Equity	2.0	6.3	4.8	10.7	4.1	0.5
Bonds	1.1	1.3	3.6	6.3	2.8	- 0.5
Banks	9.1	7.9	1.6	3.6	- 0.3	- 4.3
Tesobonos*	NA	0.6	0.7	2.0	30.1	0.3

*Total stocks of Tesobonos at end of period.

Source: IMF Balance of payments statistics and national data

Table 4

Mexico: Credit and money supply developments

(annual % changes)

	1990	1991	1992	1993	1994	1995
Bank credit	26.5	29.9	26.6	13.5	34.9	31.8
Monetary aggregates						
Central bank money	35.3	27.8	14.4	10.4	21.2	33.4
Broad money (M2)	46.2	47.2	20.4	14.4	22.7	35.6

Source: IMF international financial statistics

Table 5

Mexico: Current account balance and Domestic counterparts

(as % of GDP)

	1990	1991	1992	1993	1994	1995
Gross fixed capital formation	17.9	18.6	19.6	18.6	19.4	16.2
Change in inventories	5.3	4.7	3.7	2.4	2.4	3.7
Financing of gross capital formation	23.2	23.3	23.3	21.0	21.8	19.9
Current account balance	- 2.8	- 4.7	- 6.7	- 5.9	- 6.9	- 0.5
Gross domestic saving	20.4	18.6	16.6	15.2	14.7	19.4
Public sector	6.1	8.5	7.0	5.1	4.4	4.8
Private sector	14.3	10.1	9.6	10.1	10.4	14.6

Note: Foreign saving is equal to the current account balance

Source: National accounts of Mexico (INEGI)

Table 6

Special measures to stabilize the financial system

	AU	BR	CA	CH	DE	FR	GB	HK	IT	JP	KR	NL	US
Deposit insurance	√			√	√		√	√	√		√		√
Restriction on short selling	√		√		√	√	√		√	√		√	√
Capital injections		√		√	√	√	√	√	√	√	√	√	√
Debt guarantees	√		√		√	√	√		√	√	√	√	√
Asset insurance							√					√	√
Asset purchases	√		√	√	√		√			√			√
Nationalization					√		√					√	√

AU=Australia; BR=Brazil; CA=Canada; CH=Switzerland; DE=Germany; FR=France; GB= United Kingdom; HK=Hong Kong; IT=Italy; JP=Japan; KR=Korea; NL=Netherlands; US=United States.

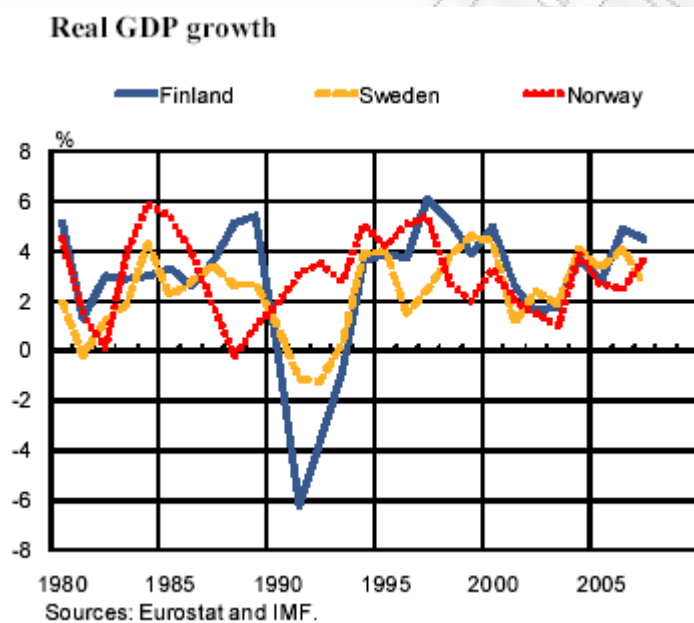
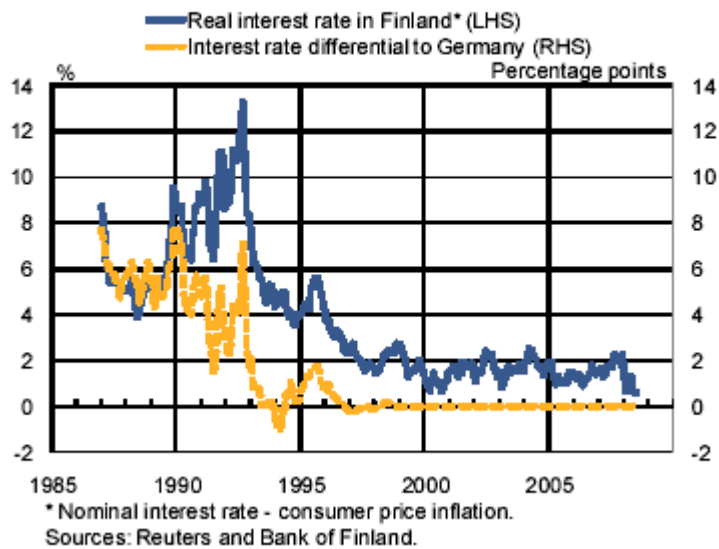
Diagram 1**Diagram 2**

Diagram 3

Real interest rate in Finland and interest rate differential to Germany (3-month rates)

**Diagram 4**

Current account

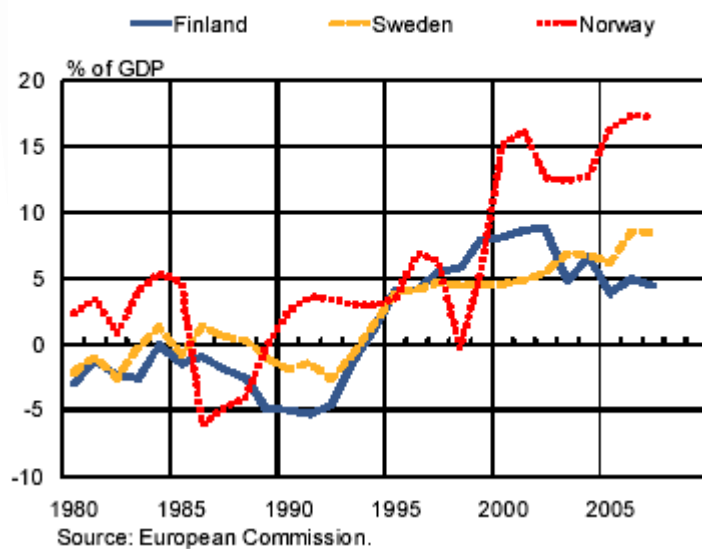
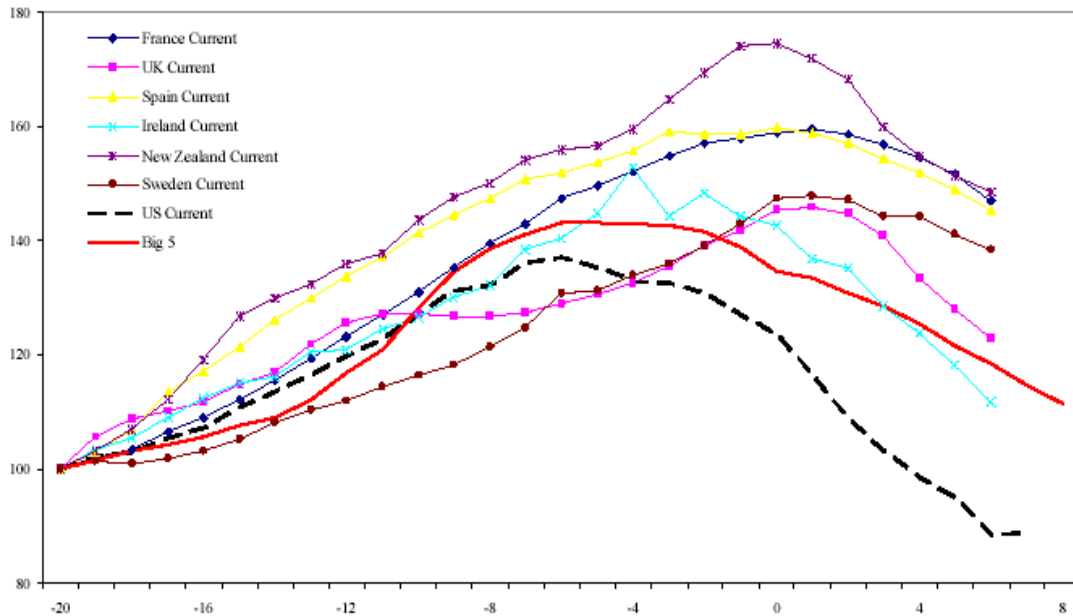


Diagram 5

Asset price bubbles

Asset price bubble this time: Sharply rising housing prices preceded the crash, typical of banking crises.



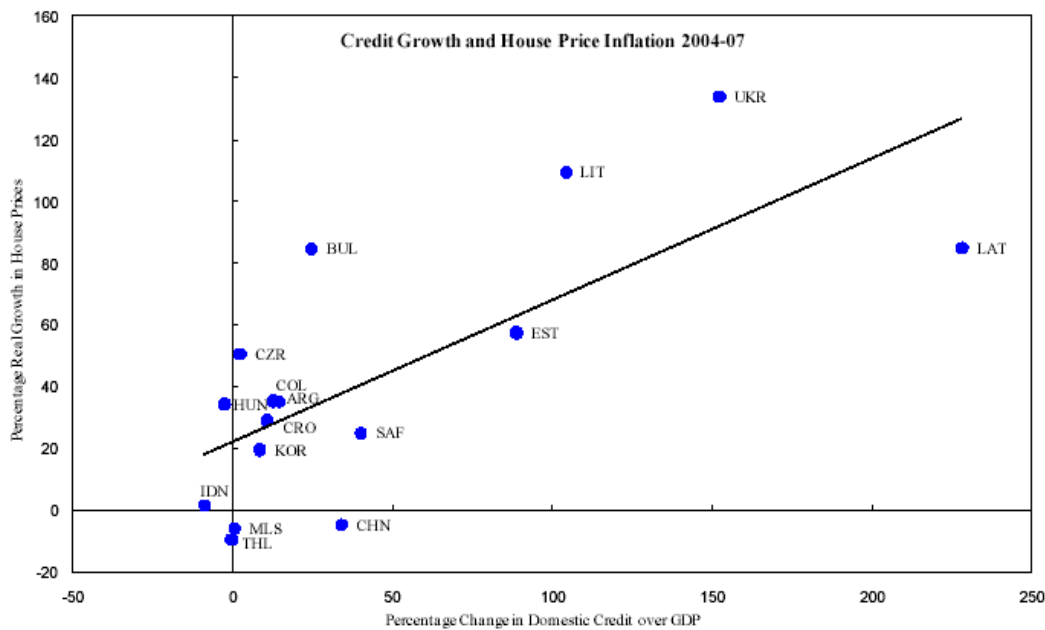
Sources: BIS, OECD, and Haver Analytics.

Note: Real house price index is equal to 100 five years prior to the banking crises. Big 5 refers to the average of indices for the five major banking crises (Spain - 1977, Norway - 1987, Finland - 1991, Sweden - 1991, and Japan - 1992). For the current crisis, the beginning date is assumed to be 2007Q3. House price series for the US is the S&P Case-Shiller National Home Price Index

Diagram 6

Credit booms

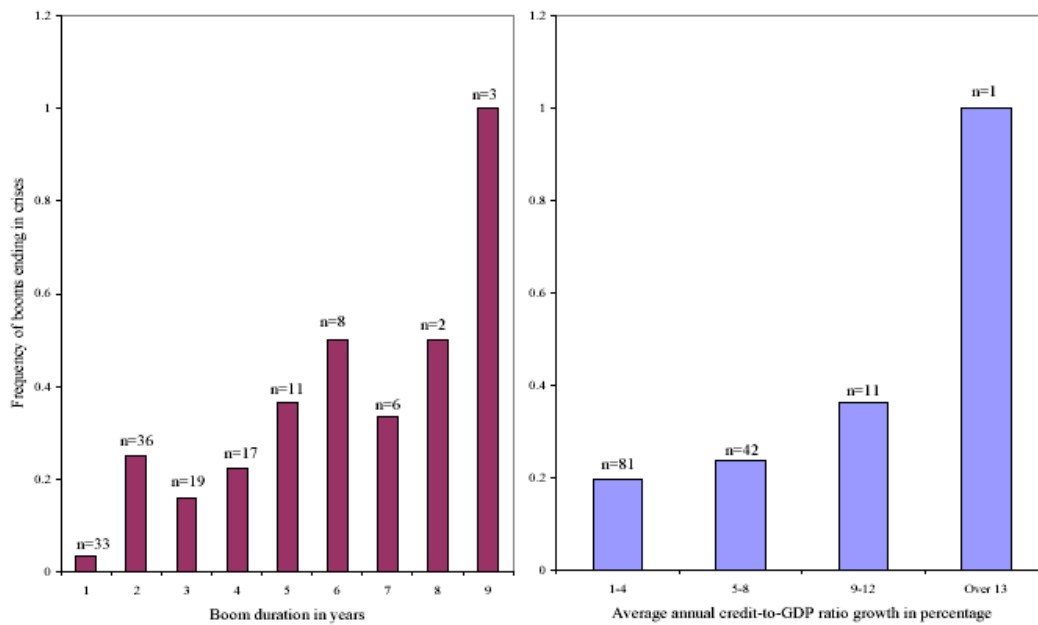
Credit and leverage grew rapidly and fuelled housing price increases.



Source: IMF International Financial Statistics, GlobalProperty Guide.

Diagram 7**Credit booms and Crises**

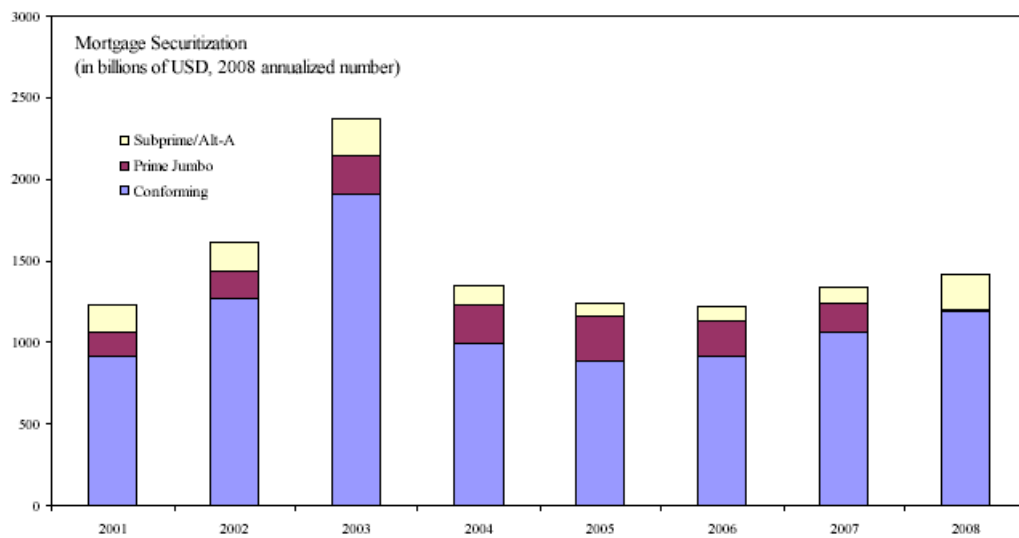
Large and long-lasting credit booms often end up badly.



Sources: IMF *International Financial Statistics* and IMF staff estimates.

Diagram 8**Securitization**

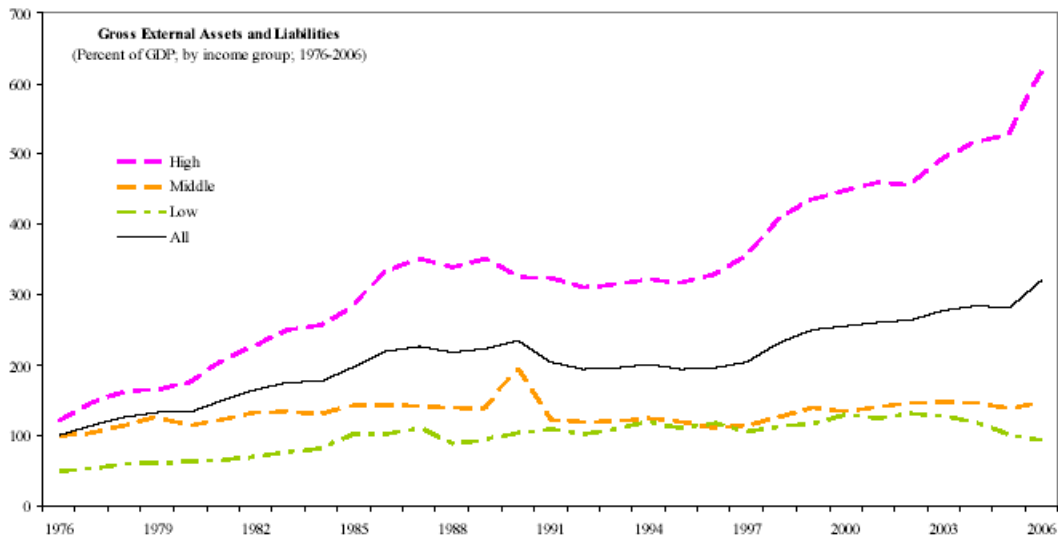
Securitization proved to be a (somewhat) new dimension, opaque to many market participants and policymakers.



Source: IMF staff estimates.

Diagram 9**Increased financial integration**

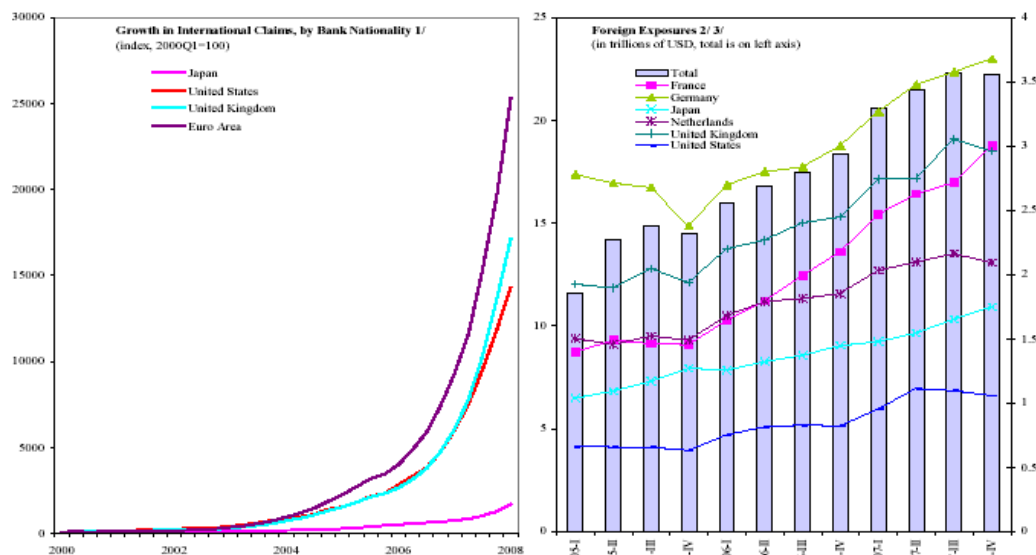
International financial integration increased sharply in last few years, escalating the risk of transmission of risks across borders.



Source: Lane and Milesi-Ferretti (2006).

Diagram 10**Cross-border banking**

International lending and cross-border interbank exposures grew exponentially.



1/ Foreign currency claims on home country residents are excluded.

2/ On an ultimate risk basis and excluding inter-office transfers.

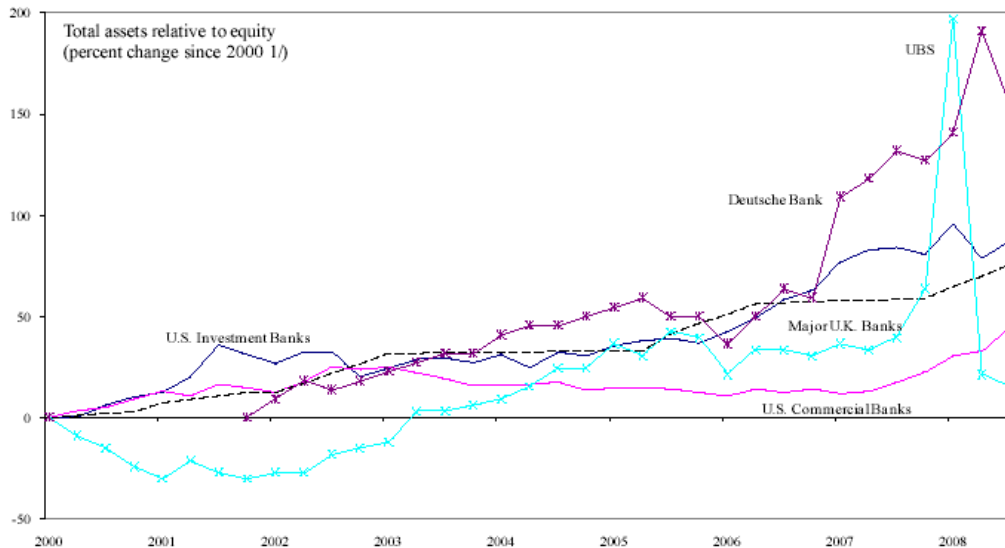
3/ Foreign claims vis-à-vis entities (banks and non-banks) in advanced economies, booked by banks headquartered in the countries shown.

Source: BIS.

Diagram 11

Financial system leverage

Leverage in U.S. commercial banks rose rapidly but still slower than the pace at which leverage in U.S. investment banks and European banks grew.



Sources: Bloomberg, Bank of England, Federal Reserve, FDIC, and IMF staff estimates. 1/End-2001 for Deutsche Bank.

Diagram 12

Household leverage

Centrality of household leverage: Not only U.S. households but also households in Europe leveraged up and saved less.

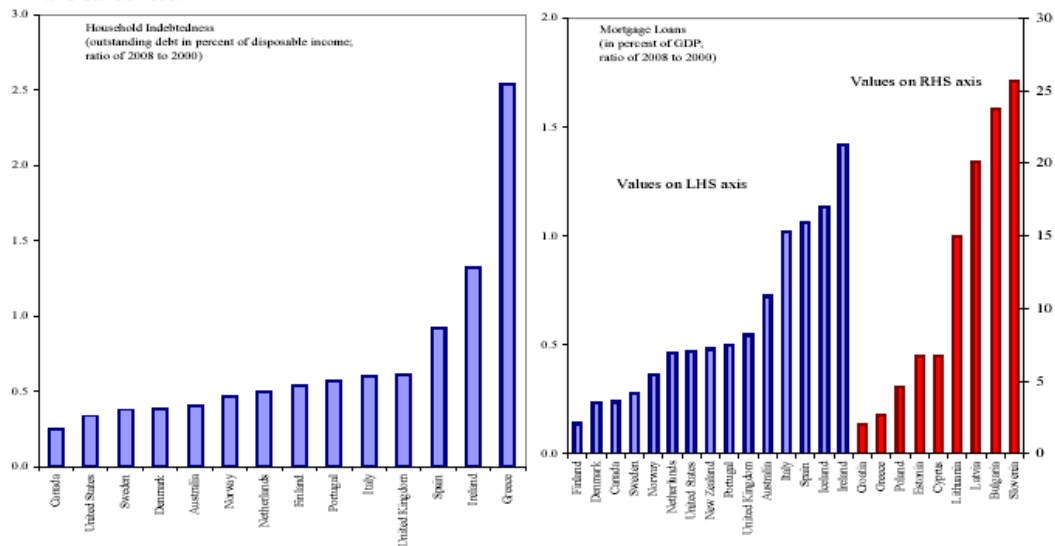
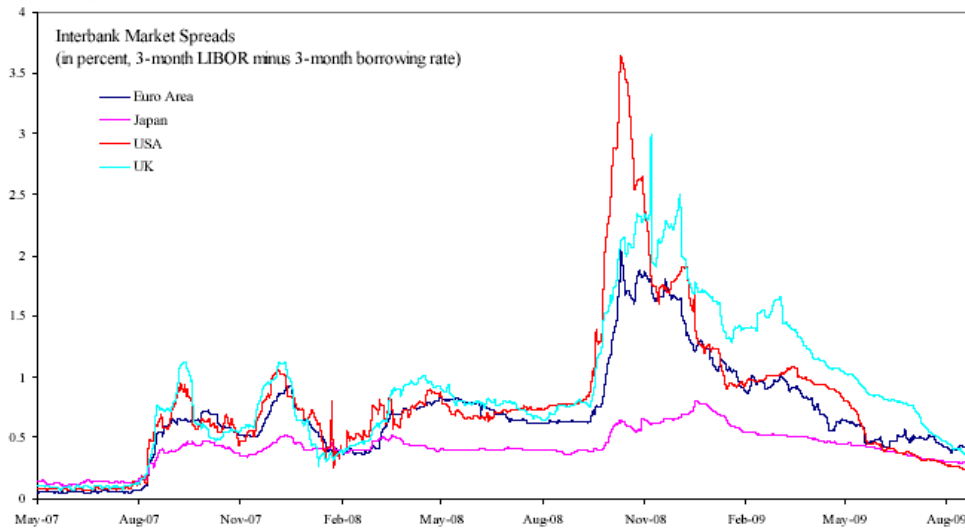


Diagram 13**Spread of the global financial crisis**

Crises spread quickly, first through lack of liquidity, and then through concerns on solvency and loss of confidence.



Source: Bloomberg.