The Causes of the Global Financial Crisis and Their Implications for Supreme Audit Institutions
Preface

Last year, INTOSAI commissioned a Task Force which was assigned to draw conclusions from the financial crisis that hit the world economy in 2008. At its first meeting in Washington D.C. 29 June – 1 July 2009, the Task Force decided to divide its work into four subgroups. The task of Subgroup 1, chaired by the Swedish National Audit Office, was to describe the causes of the crisis and lessons learned.

This report is the result of the joint effort made by all members of the subgroup, which include representatives from the SAIs of Canada, Cyprus, Estonia, Finland (observer), Japan, Republic of Korea, Saudi Arabia, USA, the United Kingdom, Venezuela and the European Court of Auditors.

The subgroup’s analysis and conclusions in this report aim to give an informative background to the crisis and from this analysis draw policy conclusions for SAIs. Since the work of the subgroup started, financial markets have recovered from the severe instability of 2008 but also been hit by new challenges to financial stability and public policy. These new developments do not contradict the conclusions in the report. On the contrary, they seem to validate them and may indeed serve as a relevant starting point for further discussion.

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Appendix I. The Boom-Bust process
Summary

Financial crises are not a new phenomenon. The world economy has from time to time been hit by crises, and the current crisis is most probably not the last one. However, several factors combined to make this one the most severe crisis since the Great Depression of the 1930s, including macroeconomic problems, failures in financial markets and shortcomings in the implementation of policy.

The financial sector has grown complex and its actors have become very big, sometimes too big to control. These institutions and their products therefore have become difficult to regulate and supervise. Even the internal control of the financial institutions themselves failed in several cases. System-wide risks therefore became much larger than ever before.

Furthermore, remuneration policies added to the build up of risks.

Governments and central banks have the responsibility of upholding financial stability through proper supervision and regulation of the financial markets and its institutions. However, the supervisory structures in many regions were fragmented which led to an absence of responsibility for system-wide risks. The supervisory and regulatory structure failed to keep pace with the evolution of the financial markets. Moreover, when financial companies become very large in relation to the overall economy, public finances are exposed to large risks.

The aim of this report is to analyze the causes and lessons learned from the financial crisis from the perspective of Supreme Audit Institutions (SAIs). The analysis in this report highlights several old and new challenges for SAIs in their task of auditing the impact of actions carried out by the executive branches of government. Areas of importance include:

- **Audit of sustainability of public finances**
  There is a need for sounder fiscal policies, once the economic recovery is ensured, in order to regain and uphold long term sustainability of public finances. A strong case can be made for independent reviews of fiscal transparency, the correctness of fiscal accounting and reporting and the adherence to fiscal rules increases the effectiveness of fiscal frameworks. SAIs, as independent authorities, can play a vital role in ensuring that fiscal lessons from the crisis are not forgotten during the next boom.

- **Audit of governments’ implicit guarantees**
  The globalization and expansion of financial markets has created large financial groups that pose considerable systemic risk. Combined with inadequate winding-up procedures for banks, governments often have little choice but to support banks using implicit and explicit guarantees which create a burden on taxpayers and distort market incentives. One of the most important lessons of
the financial crisis is that this interface needs to be reviewed and improved.

- **SAIs’ role in promoting accountability for financial stability**
  An extensive overhaul of the regulatory structure of financial markets is under way – or at least proposed – in many regions, attempting to address the failures of regulation and supervision of the financial system. Ensuring that suitable accountability is maintained is a key task for SAIs and important for the long run success of this regulatory overhaul.

- **A need for international coordination and cooperation**
  It is important for SAIs to monitor the extensive overhaul of the regulatory framework now being proposed. SAIs could for instance review the adequacy of new regulatory frameworks and its processes once they are in place, the sharing of information between supervisors and SAIs respective countries’ compliance with international standards. SAIs will also have to increase their cooperation across borders in order to audit the effectiveness of this new regulatory structure.

- **Promoting transparent, reliable financial reporting**
  The response to the global financial crisis highlighted the need for governments to have transparent, reliable financial reporting to effectively communicate the financial impact to the government resulting from the actions that were taken. Further, to provide credibility to the financial statements, they should be audited by an independent auditor using generally accepted auditing standards. Users need assurance that the financial statements they rely on, in order to make important economic decisions, are credible, transparent, and present a true and fair view of all of the government’s financial activities. There is a growing recognition, as a result of the financial reporting related to the fiscal crisis, that the transparency and reliability of some government financial statements could be improved. Consequently, in such cases, SAIs should continue to work to promote transparent, reliable financial reporting by such governments.

The financial crisis has shown the potential costs to taxpayers of a severe financial crisis and the importance of effective supervision and regulation. It is of significant value that SAIs learn from the experience of this crisis in order to mitigate the risk and minimize the effects of a new crisis.
Chapter I The anatomy of the crisis

Severe distress in a number of financial markets in 2007/08 turned into a global financial crisis after Lehman Brothers filed for chapter 11 on September 15 2008. As a result, the world has recently experienced the worst economic performance since the Second World War.

The crisis emerged from the American housing market. House prices peaked in 2006 and then dropped more than 30 per cent. This was the largest decline since the 1930s on a national level in the US. Household debt had increased significantly over the past decades (see figure 1), and during the last phase of the boom the so called sub-prime lending, i.e. lending to low income borrowers, rose quickly.

Figure 1 Rapid debt increase

During the first half of 2007 losses from sub-prime mortgages exposed large weaknesses in the financial markets. BNP Paribas, for instance, had to freeze redemptions for three funds that were invested in structured products. The market for these products had ceased to function making it impossible to value them. Counterparty risk between banks rose sharply. The interbank rates, the interest rate at which banks lend to each other, soared. From having averaged around 20 basis points over treasury bills (TED-spread) in the Euro Zone and around 40 in the US, the spread rose to 100 basis points in the Euro Zone and almost 200 in the US in the early stage of the crisis (see figure 2).

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1 Chapter 11 is a chapter of the United States Bankruptcy Code, which permits reorganization under the bankruptcy laws.
The liquidity problems in the market forced central banks to provide liquidity in various forms. Nevertheless, problems and losses continued to mount during the fall of 2007 and in December central banks from five major currency areas announced coordinated measures designed to address pressures in short-term funding markets. During the early spring of 2008 problems in the short term funding market led to the nationalization of Northern Rock in the UK. In the US a severe liquidity shortage at Bear Stearns in March prompted JP Morgan Chase to agree to purchase Bear Stearns in a transaction facilitated by the US authorities.

The idea that the real economy would not need to be strongly affected was still strong during the first half of 2008. Emerging markets and to a lesser extent the EU were supposed not to be affected thanks to strong domestic growth. Commodity prices soured and inflation in Europe continued to increase, prompting central banks to continue raising interest rates. By the end of summer 2008 that came to an abrupt end.

After years of extremely rapid expansion of sub-prime lending, which subsequently was securitized, the value of mortgage related assets fell rapidly when the housing market deteriorated. The development led to very large credit losses and threatened the very existence of banks and mortgage institutes, not only in the US but also in some European countries. By the summer 2008 it had become clear that securitization of mortgage loans had become a millstone for banks and other holders of these assets.

Losses in the US housing market caused market confidence in the two government sponsored enterprises Fannie Mae and Freddie Mac to evaporate and consequently the US government had to take control of the enterprises by September 7. A week later, on September 15, Lehman Brothers filed for chapter 11, leading to a global loss of confidence in the
entire financial system. TED-spreads rose to an unprecedented level (fig 2), asset prices plummeted and credit markets froze. Institutions needing cash had to sell at “fire sale prices”, pushing asset prices even lower, prompting more sales. A vicious circle of asset price deflation commenced.

The list of failed or almost failed large financial institutions became longer and longer: Lehman Brothers, Fannie Mae, Freddie Mac, AIG, Washington Mutual, Wachovia, Fortis, several Icelandic banks, Hypo Real Estate, ABN-Amro, RBS etc. Governments had to step in with numerous rescue operations in order to avoid a meltdown of the entire global financial system.

On September 18, coordinated central bank measures addressed the squeeze in US dollar funding with $160 billion. On October 8, central banks made a coordinated rate cut. By the end of 2008, governments worldwide had issued guarantees for bank lending, central banks had massively expanded their balance sheets at an unprecedented rate and policy interest rates were lowered to close to zero in the US and to 1 percent in the Euro zone (fig 3). By the end of the first quarter of 2009 confidence in the financial markets had improved markedly with TED-spreads down below the levels of summer 2007, when the financial distress began.

**Figure 3 Record low policy rates**

![Policy Rates Graph](source.png)

Although the origin of the crisis can be localized to a breakdown in global financial markets it soon fed into the real economy. A general increase in uncertainty, a result of the near-meltdown in the financial sector, led to a rise in precautionary savings, the postponement of planned investment projects and a running down of inventories. The resulting decline in aggregate demand amplified the crisis and spread it further around the world. By the second half of 2008 most of the developed world had fallen into recession and during the last quarter the world economy almost ground
to a halt. World trade (fig 4) plummeted, company losses soared and long term interest rates fell.

**Figure 4 World exports plummeted**

The effects on the rest of the world were reinforced by the imbalances that many countries had built up during the long period of strong growth. These imbalances could only grow as long as investors were willing to take on more risk. The development in the US lowered risk willingness globally which led to large changes in investors’ behavior. The unwinding of these imbalances, which are ongoing, has led to severe depressions in many cases. The Baltic States and Iceland are some of the more obvious examples.

The effects in parts of Europe were as severe as in the US because of close linkages to the US financial sector, strong trade effects and, in some cases, macroeconomic imbalances that started to correct. However, the effects differed quite substantially between countries.

The negative effects of the crisis filtered into the export-oriented Asia Pacific economies through the current and capital accounts of the balance of payments. Foreign demand for the region’s exports fell sharply. Japanese export volumes fell by 35 per cent over two quarters. In emerging and developing countries, whose growth highly depends on foreign investment and financing, investors massively withdrew their assets, which had a negative impact on production, business growth and market values.

In its forecast in Economic Outlook in April 2010 the IMF estimated that global GDP contracted by 2.0 percent in 2009, the steepest decline in global growth in modern times. Developed countries fared worse than developing countries on average. However, some of the developing countries in Eastern Europe and Central Asia had among the worst performances in the world, partly due to macroeconomic imbalances. The mildest setbacks were
recorded in South Asia, the Middle East and Northern Africa. Latin America was less affected by the first round effects from the financial markets crisis, but nevertheless went into recession as exports plummeted.

The deep economic downturn naturally had large social consequences as well. The most important impact was a rise in unemployment. The declining demand forced companies to lay off millions of people and unemployment soared in many countries (see figure 5).

**Figure 5 Large and rapid increase in unemployment**

The financial and economic crisis has had significant effects on public finances. The fiscal position is currently very strained in many countries. This is mainly a consequence of the unprecedented downturn in the real economy and, to a lesser extent, discretionary fiscal policy measures and injections of public capital into financial companies. IMF estimates that the discretionary measures in 2009 in the G20 countries amounted to 2 per cent of GDP and the financial support to the financial sector to 2.2 per cent.² However, the large public deficits seen today also reflect the weak fiscal position in some countries before the crisis started.

Over the last decade many countries have recorded recurrent deficits in public finances and only in boom phases have there been surpluses. As can be seen from fig 5 the Euro Zone was never in surplus over the last couple of decades. The US and UK only experienced surpluses during the boom at the turn of the century.

² IMF (2009a) and IMF (2009b).
The combination of a large shortfall in revenues and higher expenditure has, together with small buffers, reduced many governments’ capacity to counter the abrupt fall in economic activity with an expansionary fiscal policy. Traditionally monetary policies should have been responsible for stabilization policy but as interest rates approached zero, the scope for further expansionary monetary policies was limited. Due to the severe recession there was a perceived need for expansionary fiscal policy. However, the lack of fiscal sustainability during the boom years that preceded the crisis implied that many countries, especially smaller ones, would find it difficult to persuade international investors to make further purchases of government debt.
The crisis originated in the housing market. In 2006 construction activity decreased markedly as house prices started to decline. The real economy slowed as households responded to the fall in house prices by increasing their savings. Moreover, credit institutions started to tighten lending standards in late 2006 and this trend continued during the following years. However, this decline in domestic demand was partially offset by a continued growth in exports.

The slowdown was consistent with an ordinary downturn until the financial crisis erupted. At that point several financial institutions failed and equity prices tumbled. The financial sector could not uphold normal activity which affected the real economy in several ways. Housing starts reached a record low level, the private sector reduced their debt for the first time since 1955 and trade financing problems contributed to a 25 per cent fall in exports.

At this point the whole economy was on a downward track. Household confidence plummeted to record low readings according to some measures and personal outlays registered the largest decline since the Second World War. The automobile sector suffered as car sales plummeted. Industrial production fell by 15 per cent, the largest fall since the Second World War. The labour market deteriorated severely and the unemployment rate reached its highest level since the early 1980s.

The policy response was unprecedented. The Federal Reserve lowered the policy rate to close to zero, introduced massive liquidity measures and purchased bonds. The government launched two fiscal stimulus packages of nearly 1 trillion dollars.

Over time the measures taken by Federal Reserve and the government restored some confidence and the financial market started to function more smoothly again. The equity market started to recover and by mid 2009 the rest of the economy followed suit. The economy has rebounded rather strongly and is expected to grow by 3 per cent in 2010.
Many observers believed that the EU would not be severely affected by the distressed financial markets and the downturn in the US. In its spring forecast 2008 the EU Commission forecast growth in 2009 at 1.5 per cent, just below the 2008 forecast. However, growth declined already in Q2 2008 as most parts of the economy contracted slightly. Companies started to hold back fixed investments and households reduced their consumption plans. At this point the development was consistent with a mild recession.

The financial crisis struck the EU hard in mid-September 2008. Access to capital was limited, the survival of many banks became uncertain and the equity markets tumbled. The real economy was severely affected. Trade financing dried up and export volumes fell by almost 15 per cent over the subsequent two quarters, an unprecedented downturn in this region. Consumer confidence fell to record lows in the Euro Zone and households held back on discretionary spending. Purchases of capital goods were postponed and car sales dropped by almost 25 per cent on a yearly basis.

The real economy developed very unevenly within the region. The two main factors behind the differences were the extent of financial linkages and the macroeconomic policies pursued prior to the crisis. The UK suffered from its large exposure to the financial markets. Countries that built up large imbalances during the boom suffered as the markets started to correct. The Baltic States, Ireland, Iceland and Ukraine are the most obvious examples. Highly export dependent economies also recorded large set-backs. Furthermore, countries that experienced a residential construction boom – on the back of the rapid rise in house prices – recorded huge setbacks in construction as demand for new housing more or less vanished.

In the Euro Zone and many other countries monetary policy became extremely supportive. Interest rates were lowered to just above zero and central banks provided massive liquidity support to the financial sector. In most countries fiscal policies were eased, often quite substantially.

As financial stress abated and the expansive economic policies filtered through, activity slowly responded during the second part of 2009 and the outlook for 2010 is a modest expansion of 1.5 per cent in the Euro Zone.
Box 3 Development of the crisis – Asia

The Asian countries were less exposed to the financial stress since their financial markets and investors are less integrated with the countries in the core of the financial crisis. Nevertheless, the subsequent effects on the real economy were severe due to large trade effects. There were however substantial differences between countries.

China is a special case in many respects. It is a very large economy with high savings and large current account surplus. Despite being a major investor in American assets the Chinese economy was not severely affected by the price decline in US assets since government bodies took the losses. However, exports fell by a staggering 40 per cent. China introduced a massive fiscal stimulus package to counteract the drastic fall in foreign demand. The main ingredients were to bring forward infrastructure projects and construction activities. Moreover, monetary policy was eased, both in terms of policy rates and by a lower reserve requirement ratio. Through an expansionary economic policy, China managed to limit the impact on GDP growth rate in 2009.

The region’s more open economies were hit hard. In Japan exports fell by 35 per cent in a short period of time. The decline in exports fed into the rest of the economies but to a lesser extent than in the Western part of the world. Asia as a region proved to be surprisingly resilient to the global economic slowdown.

One reason behind the resilience was that few countries in the region had built up imbalances during the boom years. The lessons they drew from the Asian crisis was to pursue sound macroeconomic policies.

Due to an already expansionary monetary policy, Japan had little possibility to ease further. Many other central banks in Asian countries did however reduce interest rates substantially, albeit not to the extent that was the case in Western Europe and the US. Most countries in Asia also implemented measures to stimulate aggregate demand through fiscal expansion. Fiscal stimuli in 11 Asian developing economies averaged 7.1% of nominal 2008 GDP according to Asian Development Bank. On the back of these stimuli, growth in South Asia remained at the same pace as in 2008.

Some Asian countries have recovered very quickly. South Korea experienced a rapid return after a 4.5 per cent fall in GDP in Q4 2008. The economy reached new highs already three quarters later. The region as a whole is expected to recover rather strongly in 2010.
Chapter II. Causes of the crisis

The full story behind the financial crisis will take decades to develop. If the Great Depression is any guide, studies of what really caused this crisis will occupy economists’ minds for a long time to come. As was shown in the previous chapter the crisis started in the US and spread through financial and real economic channels to the rest of the world. Countries with weak initial economic position were hit the worst. Some causes of the crisis can thus be found in the macroeconomic policies of the past years. However, failures in the financial system, particularly in the US, were at the root of the problem. These failures were the result of inherent weaknesses in the financial system, the economic policies pursued in some countries and inadequate regulation. In the following we try to explain some of the most important causes of the crisis.

Macroeconomic causes

Low inflation and low interest rates

The last decades were characterised by an unusually high degree of macroeconomic stability. Steady growth was combined with low and stable inflation in most of the advanced economies. Hence this period was called the Great Moderation.

A number of factors contributed to low inflation during the last decade. The opening of the former communist countries to world trade implied a massive supply of low cost labour to the world economy. In combination with rapid progress in the use of information technology, production processes could be divided into different parts and located in different countries, resulting in shifts in the balance of world trade. For some companies, almost the whole world became a potential production centre and different parts could be produced at different locations. This reduced production costs considerably in many industries. An indirect effect of the increased flexibility of production facilities was that the bargaining power of local trade unions weakened, holding back wage growth in more developed countries and dampening domestic inflation pressures.

Many central banks in the developed countries have adopted inflation targeting over the last two decades. This change in the monetary policy framework has been successful in bringing down inflation expectations. The combination of low, and lower than expected, inflation had the consequence that key interest rates were kept very low by historic standards.
Low interest rates had several implications. Borrowing by individuals to purchase residential housing became more affordable and house prices rose substantially in many countries. Prices doubled or trebled in just a decade. Households in those countries also recorded a very rapid increase in their indebtedness. The most common variable to measure debt, household debt/disposable income, reached new highs in almost all Western countries.

**Higher risk taking**

The increase in demand for debt was not matched by an increase in bank deposits. Thus banks had to find funds elsewhere. This made them increasingly dependent on the wholesales funding markets. Other financial actors, like hedge funds, also relied heavily on short term funding on the market whereas their investments were more long term. Financial institutions thus built up liquidity risks on a large scale.

The low interest rates made risk adverse investors uncomfortable. Treasury bonds sometime yielded less than certain funds guaranteed return. Therefore these investors sought higher risk in order to receive higher return. Other investors exploited the low borrowing cost to invest in higher risk assets. Over time the higher demand for risk reduced spreads between conventional fixed-income assets as interest rates on risky asset fell. This was interpreted as a consequence of the more stable macroeconomic surrounding, while in reality it was also an indirect effect of investor’s changed behavior on the back of low interest rates.

An overall conclusion is that society severely underestimated risk. This was also true for many supervisors and monetary authorities\(^3\).

\(^3\) However, there were also some warnings, see e.g. White & Borio (2006) and BIS reports
Leverage was also increased in order to maintain a high nominal return on capital. Hedge funds and venture capitalist are obvious examples but banks and many ordinary companies also increased their leverage.

An indirect form of risk taking was that many companies and financial institutions to a large extent relied on short funding and a well-functioning repo market. Liquid markets were taken for granted. However, liquidity dried up when investors became uncertain over the quality of assets involved in asset-backed securities and the repo market. Several companies and financial actors came under acute financial stress when they could not refinance themselves through their ordinary sources and banks were reluctant to step in.

**Growing imbalances**

For many years a number of countries had been running large current account deficits. This situation worsened during the 2000’s. At the same time oil exporting countries and some emerging countries, especially China, have been running large and rising current account surpluses, see fig. 8. A large proportion of these current account surpluses were invested in developed countries. The increased demand resulted in higher prices and lower government bond yields and low returns on fixed income financial assets across all advanced economies.
Thus, apart from all the positive effects of low inflation and low interest rates, a side effect was a rapid accumulation of debt among households in the Western world. Moreover, the financial system became loaded with risk although its participants were largely unaware of this.

**Failure to address the financial cycle**

Many central banks, in particular the US Federal Reserve, considered that they should not respond to the rapid rise in credit and asset prices. Instead they should (aggressively) drop the interest rate if asset prices fell sharply and led to an economic downturn. This approach was based on the notion that they could not identify an asset price bubble and if they could it would be dangerous to try to deflate it – but they could mitigate the deflationary effects on the economy of a fall in asset prices.

In countries where central banks had this approach the responsibility to address financial cycles implicit rested with the government and, to some extent, with supervisors. However, supervisors mainly address issues that affect individual firms and surveying systemic risks have seldom been part of their assignment.

In the end it has not always been very clear who was responsible for the financial cycle. In many cases the rapid credit expansion and increased leverage was left without action.
Financial market causes
The crisis occurred in a situation with high and stable growth but also with growing macroeconomic imbalances, low interest rates and ample liquidity. However, a well-governed and resilient financial sector should perhaps be able to function in such an environment, without creating the excesses seen over the past decade. It was after all not the first time when interest rates were low and asset prices were booming. Thus it can be argued that the crisis in many ways was a result of inherent weaknesses in the financial markets, which allowed a large but underestimated build up of risk.

Financial innovations increased complexity
The financial markets and its institutions have grown markedly over the past decades. In the developed world, deregulation of financial markets since the 1970s combined with globalization has lead to the formation of large and very complex cross-border financial institutions. Global markets have also become increasingly integrated, with large capital flows across borders and emerging economies gaining an increasing share of international trade. Financial innovations over recent years have increased the complexity and scale of the network of inter-relationships between financial institutions. These innovations were made possible by both advancements in financial theory as well as in the technical infrastructure of the financial markets.

One example is the rapid increase in financial innovation, such as securitization and over-the-counter derivatives (OTC derivatives). They were thought to achieve high nominal returns without any significant increase of risk. As later became evident, the risks inherent in these new products were not fully understood by banks themselves or by the regulators and supervisors.

The growth of securitization was lauded by most financial industry commentators as a means to reduce banking system risks. The purpose of securitization is to repackage and sell assets to investors better able to manage them. The consensus before the financial crisis was that the originate and distribute model of banking resulted in risk being diversified and distributed more widely across the global financial system.

But when the crisis broke out it became apparent that diversification of risk had not actually been achieved. Some of the holdings of the securitized credit were not in the books of end investors intending to hold the assets to maturity but on the books of highly leveraged bank-like institutions (so called Special Purpose Vehicles or SPVs). The increasing use of the originate and distribute model of lending also meant that lenders have had less incentive to apply strict credit controls since the loans were expected to only stay on lenders’ balance sheets for a short time.
System-wide risks underestimated

Developments in financial markets over the last twenty years have in certain aspects made the financial system more vulnerable to market shocks. Financial institutions have become increasingly more dependent on continued liquidity in securitization and other wholesale funding markets for their financing.

On their own, market participants cannot identify or manage systemic risk. In disrupted markets, banks’ actions are motivated by self preservation and make the financial system as a whole less stable. Regulatory standards have largely been set on the basis that if each financial institution remained sound, then the system overall would also be sound. But this approach underestimated the implications for system-wide risk of innovations in financial markets. The extension of diversification, for example through expansion in the use of securitization markets and derivatives products, increased systemic risk by creating an increasingly complex network of interconnections between banks and other market participants.

Because financial market participants were highly interconnected, a full assessment of the risks of investing in or lending to a bank required information about all of the bank’s counterparties, all of its counterparties’ counterparties and so on. This had two important implications:

1. In stable financial markets, banks did not take fully into account the potential spill-over effects of the failure of a counterparty on the rest of the financial system.
2. When financial markets faced broader disruption, market participants over-compensated by, for example, ceasing to lend to creditworthy counterparties.

The first of these factors meant that market discipline was not enough on its own to ensure that systemic risk was managed effectively. The second meant that a shock that affected one, or a group of firms, generated heightened market uncertainty, such as retail or wholesale runs on distressed banks.

One example of these risks was the fact that in many instances the conditions of “true sale” were not met regarding securitized loans. Banks issued credit and/or liquidity guarantees for these products. Typically capital requirements for liquidity guarantees were lower than for credit guarantees and thus cheaper for the issuer. However, when liquidity dried up during the crisis, the banks that had originated the assets and were guaranteeing the liquidity, bought back the products, which thus migrated back into the banks’ balance sheets.
Inadequate risk management

Financial institutions relied too much on data from the recent past as an indicator of future market performance. As pointed out above, the stable macroeconomic environment led investors to dramatically underestimate the likelihood of relatively low-probability events such as those of the last two years. Risk models in banks and other financial institutions turned out to be poor representations of how market participants would respond. In particular, the use by banks of value-at-risk (VAR) models, which used the volatility of asset prices over the recent past to quantify the risk entailed in marketable securities, increased the tendency of financial markets to underprice risk in good times and contributed to the herding tendencies of markets.

Stress testing also proved inadequate. Stress testing aims to allow banks to assess the impact of more extreme events on their business, which are not generally captured by traditional risk-management models. However, the stress tests used had several shortcomings. For instance they missed the impact of system wide shocks, such as liquidity shortages, and how risks could be transmitted through markets in distressed conditions.

Credit rating agencies failed to evaluate risks

The failure of credit rating agencies and investors to fully evaluate or understand the financial risks of new complex products contributed to the crisis. Credit rating agencies were thought to serve as gatekeepers to the global credit markets. Through their issuance and ongoing monitoring of large numbers of credit ratings on debt and other securities issued by corporations, governments, and securitization vehicles, credit rating agencies exercise extensive influence over access to the capital markets and the pricing and terms on which borrowers receive credit. A large portion of different types of structured finance products were highly rated, however the methodology on which these ratings were based did not capture the sudden and dramatic increase in delinquencies and foreclosures in the US housing market, particularly from sub-prime mortgages. As these securities started to incur losses, it became clear that their ratings did not adequately reflect the risk that these products ultimately posed.

In addition, due to conflicts of interest such as credit rating agencies’ reliance on issuers to pay their fees and their employees providing recommendations to issuers on how to achieve a desired rating, the integrity of credit ratings in general have been questioned. Further, the meaning of structured finance ratings was a contributing factor. Credit rating agencies used ratings symbols for structured finance products that were identical to those used for traditional corporate fixed-income securities – even though they had much less history with and understanding of the structured finance products.
Remuneration systems spurred risk taking

Financial institution compensation practices that reinforced lax underwriting and excessive risk taking has also been a contributor of the financial crisis. Specifically, financial institutions created distorted incentives for employees by rewarding the volume of loan or securitized transaction origination over long-term asset quality. This contributed to the financial crisis as lenders originated poor quality loans then sold them on the secondary market, passing risks on to investors. An Organization for Economic and Community Development report noted that during the 1990s, as banks began to focus on faster share growth and earnings expansion, their strategy became to grow earnings through the income and fees generated in the securitization process. As an incentive to employees to generate more volume, firms often based bonuses on the up-front revenue generated from origination of loans or securitized transactions, instead of the long-term performance of an asset. This resulted in payment regardless of the ultimate quality of the asset. For example, according to a Bank for International Settlements (BIS) report, in some cases, profits calculated with complex mathematical models were used to determine rewards even when markets for the assets underlying the calculations did not exist and so they could not be sold. Furthermore, payment for executives was often based on short term indicators such as the development of the equity price of the firm, rather than longer term trends.

Banks circumvented capital requirement regulations

One of the perceived benefits of securitization was that risks where moved from banks to other parts of the financial system. In theory, risk was widely distributed among end investors with the appetite and means to manage it. Some supervisors considered securitization and other financial innovations as revolutionary as it reduced risks in the banking system and distributed it to those that wanted it.

However, few understood that a large part of the securitized loans still were attached to the banks in different ways. The SPV’s created to handle the securitized loans were closely controlled by the banks and often contained explicit or implicit guarantees of financing. Hedge funds associated with banks often had similar arrangements. Although these credits left the bank’s balance sheets the responsibility firmly remained with the banks. Thus, to some extent the banks were able to circumvent capital ratio rules in order to reduce the amount of capital they were required to hold.

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6 Norberg (2009).
Procyclical credit conditions

Systemic risks are built up over time. In the upturn, banks were more confident and eased credit conditions. In the downturn, the converse happened. This movement between credit conditions and the economic cycle is called “pro-cyclicality”, as it amplifies the cycle. The pro-cyclical nature of risk-taking in financial markets therefore resulted in banks becoming over-leveraged and over-extended during the good times, making markets as a whole more vulnerable to a change in sentiment. Adrian and Shin (2007) present evidence showing that financial institutions increase their leverage during asset price booms and reduce their leverage during downturns. This behavior, in combination with the pro-cyclicality of mark-to-market valuation, increases the fluctuations of the financial cycle.
Policy implementation and regulatory failures

Governments and central banks are responsible for upholding stability in their domestic financial systems. Some causes of the crisis can be found in failures of regulation and supervision of the financial market. Furthermore, other political decisions exacerbated the lending boom.

Government policies lowered credit control

Government policy has in some countries been focused on increasing home ownership. In the US, for instance, the desire to increase the level of homeownership led to large increase of sub-prime mortgage lending, which later would turn out to be the root of crisis. Various programs were implemented, providing down payment assistance and homebuying education to help low-income and minority families obtain mortgages and challenged the real estate and mortgage finance industries to increase the homeownership rates of minorities.

Subsequently, mortgage lenders increasingly used more exotic types of mortgages to allow borrowers with lower credit quality to afford loans. These loans were securitized at a growing rate. For example, nonprime mortgages, which include sub-prime and Alt-A loans that typically did not have documentation of borrowers’ incomes and had higher loan-to-value or debt-to-income ratios, grew dramatically. In 2001, lenders originated $215 billion in nonprime loans, representing 10 percent of the total mortgage market. By 2006, lenders had originated $1 trillion in nonprime loans, representing almost 34 percent of the total mortgage market in that year. This additional demand for housing contributed to the rise in housing prices that, when it stopped, proved a major source of the crisis.

No one responsible for – or understood – system-wide risks

In both the US and the EU the supervisory structures were fragmented and lacked sufficient coherence and efficiency. This was not an unknown problem. The Basel Committee on Banking Supervision had worked on trying to create a structure of lead supervision and in the EU the concept of home and host supervisor had been developed in order to create a division of labour between different supervisors. Furthermore the initiative to create the Joint Forum of supervisors of banking, insurance and securities markets was an acknowledgement of the importance of this issue.

In the US banking supervision was divided between the Fed, the OCC, the FDIC, the OTS and state regulators. In order to be able to deal with banks that spanned over several of these supervisors mandate authorities developed complex structures for collaboration, coordination, information exchange and division of labour. Moreover, there were difficult agency

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Office of the Comptroller of the Currency.
The Federal Deposit Insurance Corporation.
The Office of Thrift Supervision.
problems occurring when a bank e.g. had to collaborate with both banking supervisors and the SEC.

In the EU, the supervisory structure was fragmented by the borders of the Member States. The inherent problems of cross-border coordination had been recognized for a time. The problem of division of labour between home and host country supervisors was on the agenda and also the question of trying to establish a central node for more operational supervisory issues in the EU.

The European Commission had identified these issues in the process of developing the Financial Services Action Plan. The Lamfalussy report\textsuperscript{10} and the establishment of three EU Committees dealing with banking, insurance and securities markets were one step on the way to establish a more coordinated supervisory structure across EU markets. However, efforts to coordinate macro- and micro supervision of the financial system did not lead to any notable change before the crisis erupted. The result was that it was unclear which body was responsible for system-wide risks across the EU and that these risks were underestimated in the supervision of individual financial institutions. The supervisory structure in the EU is now the subject of a substantial re-organization.\textsuperscript{11}

\textbf{A lack of international harmonization and coordination}

Regulatory systems in individual countries could not keep up with the pace of the internationalisation of credit markets and the growth of cross-border banking. As mentioned before the creation of the Basel Committee and other global structures for insurance and securities markets had been a step forward. Another similar step was the work of the IMF and its Financial Sector Assessment Programs whereby countries were assessed to what extent they complied to international standards and good practice.

When the crisis emerged it seems clear that regulators/supervisors had not cooperated in a sufficient manner, so that the responses were taken in due time and in a correct way. There is evidence of problems of coordination of reactions in due time. One example was related to the differences in deposit guarantee systems globally but also within the EU. The EU Deposit Guarantee Directive only aimed at a minimum of harmonization. When countries drastically changed the coverage in the midst of the crisis a high degree of uncertainty in markets and risk for regulatory arbitrage arose.

The lack of international harmonization was a problem as regards the division of labour between supervisors when dealing with a bank in distress. However, there is an experience among supervisors in major financial centers to deal with banks in distress. For instance, the sudden collapse of LTCM was dealt with very effectively by the Fed. On a more general level

\textsuperscript{10} Lamfalussy (2001).
\textsuperscript{11} See Eriksson (2010).
these matters had been discussed in the Basel Committee on Banking Supervision already back in the 1980’s. Though there were collaborative structures and sharing of experiences among supervisors, the more fundamental problem of finding a long term stable structure and a clear division of labour between different agencies had not been solved.

Also within the EU there were cooperative structures set up between supervisors and between supervisors and central banks. However, the division of responsibility between central banks, ministries of Finance and independent financial supervisors were not dealt with properly. This contributed to the fact that the EU lacked an efficient mechanism for cooperation between central banks and supervisors on financial stability issues.

_Supervisors did not understand risks or that banks by-passed capital requirements_

Another inherent issue that proved to be important was the regulatory arbitrage to which imperfect regulation of banking contributed. This was most obvious in the US market for housing finance. This is a market that traditionally has generated risks in banking. It is surprising that due attention was not given to the risks that were built up when banks for more than a decade and in accelerating pace securitized loans for housing directed to risky customers.

One force behind this development was regulation of capital in banks that banks by the use of financial techniques were able to circumvent. Neither US banking regulation nor Basel I capital adequacy regulation did fully identify risks associated with securitization of credits. Consequently, no or very little capital was required to be held against those risks.

Many saw securitization as a means to diversifying risk and thus something that could contribute to financial stability. At the same time it was clear to the supervisory community that securitization contained serious risks that could have systemic importance and needed a proper regulatory response. This was identified in the reform-work in the Basel Committee and was taken on board in a major reform in order to avoid regulatory arbitrage that lead to new capital requirements for banks that was labeled Basel II. The result of this work was a more sophisticated general way to measure risk, regulations that required banks to hold capital against losses in relation to their total exposures and enhanced rules for banking supervision.

Although in principle Basel II contained new and enhanced regulation on securitization some are blaming Basel II for reducing bank capital. However, Basel II rules were not applied in the US when the crisis evolved. The EU had decided to implement the new regulation for capital adequacy but the new Basel II rules had not been in operation there either when the crisis unfolded. The regulatory arbitrage had an important role in the
building up of the financial crisis since increasing volumes of credit would have required more capital should the credits remained on the banks balance sheets.

Winding up procedures for banks

In banking there are potential externalities associated with insolvency. It is widely accepted that one bank’s failure may lead to a “domino effect” that could threaten the entire banking system. The interconnectedness of banks implies that there is a substantial difference between the failure of a bank and the failure of, for example, a textile manufacturer. One manufacturer’s failure may offer scope for expansion to other manufacturers. One bank’s failure can lead to losses for other banks with claims on the failing bank.

These externalities create a need for a special winding up procedure for financial institutions. Insolvency procedures, such as Chapter 11 in the US, are too time consuming to allow an orderly winding up of a bank without risking the insolvency of one institution spreading to other solvent institutions through price and liquidity effects in securities markets. The lack of proper procedures in many countries has left governments with few options but to bail out insolvent financial institutions.

Governments guarantee the financial system

Large banks’ and systemically important non-bank financial institutions’ balance sheets have become explicitly and implicitly guaranteed by the state. The reason most often emphasized is that the failure of a bank can threaten the payment system as a consequence of contagion of one bank’s failure through the banking system.

With the introduction of deposit insurance in the US after the Great Depression in the 1930s the government gave an explicit guarantee to parts of banks’ balance sheets. Deposit insurance is now common in many parts of the world. Recurrent bail-outs of other types of creditors to failed banks and systemically important non-bank financial institutions have in effect created a larger implicit guarantee by governments to the banks. This became obvious during the current crisis.

If the state guarantees the funding of a bank, the cost of debt funding decrease since bank creditors do not have an incentive to differentiate between good and bad banks as long as they are guaranteed. This means that the bank can increase their return on equity by increasing leverage at a lower cost. Haldane (2010) shows that capital ratios have decreased and banks’ balance sheets expanded throughout the past 130 years in both the US and UK. In fact, by the start of this century, UK banks’ balance sheets were more than five times larger than annual GDP, 10 times more than just

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12 The following build on Wihlborg (2010).
40 years earlier. As the balance sheets expand so did the implicit risk to the state, especially since the capital and liquidity buffers in the banks diminished.

The implicit guarantee has a long term destabilizing effect. The expectation of bail-outs of large institutions creates a competitive advantage for big, interconnected and opaque institutions. The implicit guarantee which is the result of governments’ previous actions to ensure market stability creates incentives for banks and other financial institutions to become too big to fail. The paradox is thus that externalities creating systemic risk are created by the fear of systemic risk.

In the lead up to the crisis market participants perceived that there was an implicit guarantee from governments that if a systemically important institution would fail governments would use public funds in order to save that institution (see e.g. Turner (2009)). This notion was based on experiences from earlier government interventions around the world. As can be seen from the failure of Lehman Brothers, in such a situation actions that are not in line with market expectations can lead to a large rise in uncertainty in markets.\(^\text{13}\)

Summary
Several factors combined to cause the crisis. The macroeconomic environment of the past decade saw growing imbalances, in particular in China and the US. The high savings ratio in e.g. China helped finance a growing current account deficit in the US without an increase in interest rate levels. Globalization together with productivity growth, in particular thanks to information technology, decreased inflation pressure, which in combination with an expansionary monetary policy meant that interest rates became very low. The low interest rates together with ample liquidity spurred the credit boom in the financial markets. An underestimation of risk increased the growth of the financial sector and created an unstable financial system. This underestimation was due to several factors. New financial innovations and system-wide risks were poorly understood. Rating agencies failed to assess the risks associated with e.g. structured finance. Pro-cyclical accounting standards also stimulated the credit boom in the same direction. Also, some specific policies such as the US policy to increase home ownership increased the sub-prime mortgage market, which meant a decline in credit control.

Governments and central banks have the responsibility of upholding financial stability through proper supervision and regulation of the financial markets. However, the supervisory structure in many regions was fragmented leading to an absence of responsibility for system-wide risks.

\(^{13}\) Cochrane (2009) draws the conclusion that “once every one expects a bail out, it (the government) has to bail out or chaos results.”
The supervisory and regulatory structure failed to keep pace with the evolution of the financial markets.

In the past, governments have proved their preparedness to bail-out banks in order to uphold financial stability. One reason for this is the difficulties under most jurisdictions to unwind a bank without serious distortions in markets, for depositors and for the economy as a whole. This has in effect created an implicit public guarantee to creditors of the financial sector that they will not face losses. This guarantee meant that institutions deemed too-big-to-fail faced lower costs of finance and that the stake for a country’s public finances grew in tandem with the size of its financial sector. These implicit guarantees were not recorded in the public accounts. The current crisis showed that taxpayers and parliaments were not fully aware of this, which points to an import accountability problem.
Chapter III Lessons from past and current crises

The causes behind the current crisis should also be seen in relation to experiences from past crisis. The Great Depression of the 1930s is perhaps the most widely known and studied economic crisis of all time. However, financial crises have hit the world economy with some regularity throughout history.\textsuperscript{14} Table 1 summarizes a few characteristics from a couple of crisis episodes, namely the Great Depression of the 1930s, the Asian Crisis of the 1990s, the IT-Bubble during the turn of the millennium and the current crisis. While all crises are different, some common features can be noted.

A common feature is that the economic development follows a boom-bust pattern where financial and macroeconomic imbalances are built up during the boom. The economic development is on an unsustainable path and after a triggering event the boom turns into a bust and the economy rapidly deteriorates (see Appendix I for a stylised description of the boom-bust process). The economic decline prompts policy makers to try to mitigate the effects of the crisis. The policy lessons from the crises often lead to large changes in the institutional setup of fiscal and monetary policy during the subsequent economic recovery.

General characteristics

*The Boom-period*

Common to all crisis episodes mentioned in table 1, is that the periods prior to the crisis were associated with high economic growth and ample supply of credit. This spurred an increase in asset prices, sometimes in stocks and sometimes in both real estate and stock markets. Growing macroeconomic imbalances are also a common feature, be it current account deficits or rising inflation.

Moreover, public finances are boosted by strong economic activity as well as high asset prices. In such circumstances tax revenues, especially company tax and capital gain tax, become much higher than under more normal conditions. Therefore the true state of public finances is overestimated as the official numbers exceed the underlying structural situation, often by a broad margin. For instance, according to a recent IMF report the headline fiscal balance was around 7 percentage points higher than the structural fiscal balance in Ireland during the boom years 2006-2007\textsuperscript{15}.

\textsuperscript{14} See e.g. Kindleberger (1996) and Reinhart and Rogoff (2008).
\textsuperscript{15} Kanda (2010).
Table 1. Some characteristics of previous crises

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<tr>
<td><strong>Boom characteristics</strong></td>
<td>Credit expansion, high leverage, asset price increases (especially real estate), macroeconomic imbalances, flexible exchange rates</td>
<td>Asset price increases, high investment growth in IT</td>
<td>Asset price increases (stock and real estate prices), high growth, short term borrowing, current account deficits, high inflation, pegged exchange rates</td>
<td>Credit growth, asset price increases, inflation, fixed exchange rates</td>
</tr>
<tr>
<td><strong>Trigger event</strong></td>
<td>Falling house prices and the failure of Lehman Brothers</td>
<td>Higher FED rates</td>
<td>Thailand’s decision to let the baht float in July 1997</td>
<td>Wall Street crash 1929</td>
</tr>
<tr>
<td><strong>Policy response</strong></td>
<td>Expansionary monetary and fiscal policy, bail-outs</td>
<td>Expansionary monetary and fiscal policy</td>
<td>IMF bail-outs, depreciated exchange rates</td>
<td>Initial tightening of monetary policy, exchange rate depreciation</td>
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**Trigger events**

The imbalances build up during the boom periods and continue until a point in time where the bubble bursts. The triggering events vary from crisis to crisis. In the case of the Great Depression the crash on Wall Street in 1929 is often seen as the beginning of the crisis. However, it took some time before the financial crisis turned into an acute crisis for the real economy. Many researchers claim that the policy response of the monetary authorities and governments made the depression of the 1930s both much deeper and longer than necessary.

During the Asian crises in the 1990s currency speculation was in focus. Thailand’s decision to let its baht float in July of 1997 was the starting point of a series of currency crises across the region. A few years later the IT-bubble, or Dotcom-bubble, burst as the stock markets peaked and subsequently fell sharply, partly due to rising interest rates. The effects on the real economy were however relatively mild. The links between the stock market and the real economy was weaker than normally since the boom had been financed by equity capital rather than through financial institutions.

**Policy response**

While fiscal policy was used for the first time to counteract the crisis during the 1930s, monetary policy played a more important role in the development of the Great Depression. Furthermore, new and more stringent regulations of financial markets were introduced, which culminated in the Bretton Woods system after World War II.
During the Asian crisis many countries allowed their currencies to float. Furthermore, several countries in the region enforced measures to curb imports. In the West, monetary authorities eased monetary policy markedly. After the IT crisis the main policy response was again lower interest rates.

What was different this time?
The current crisis started rather slowly with a decline in house prices which over time affected the value of many financial instruments. The catalyst to the financial turmoil and the subsequent steep fall in global economic activity was the fall of Lehman Brothers. During the current crisis the policy response has been unprecedented. Monetary authorities cut interest rates aggressively, to almost zero in many cases. Furthermore, they provided various forms of liquidity support and in some cases purchased government debt to hold long term rates low. Governments introduced a range of measures, including guarantees and capital injections, to secure the survival of financial companies. Moreover, the fiscal policy response was extremely strong on an overall global basis, albeit very different between countries depending on among other things the size of the downturn and the initial fiscal policy position in each country.

The most important feature of current crisis has been the importance and the deep impact of the financial sector. Over the last decades the financial sector has grown immensely, become more complex, more global and integrated than ever before. Neither financial institutes nor regulators and supervisors fully understood the implications of the increasingly complex network that the financial system had evolved into. Moreover, banks have become increasingly dependent on the wholesale funding market which is much less stable than their traditional deposit base. The combination of an opaque financial system and reliance on a more or less daily financing on a market where credibility is essential can become a dangerous one. Thus, although not realised at the time, the system-wide risks were much larger than ever before.

A second feature was the complexity of both new financial instruments and some financial companies. It was probably exceptional that not only investors but also the financial institutions themselves did not fully understand the risks involved. The complexity of financial instruments also contributed to increasing uncertainty over their fundamental value in a situation where stressed holders sought to dispose their assets. This lowered demand and prices had to fall a long way before buyers were prepared to step forward. The use of mark-to-market accounting rules to value trading books impacted on balance sheets, which prompted further rounds of asset sales. These structures therefore induced a vicious circle and contributed to develop the crisis into a systemic crisis.

A third feature of the current crisis was the exceptional speed and depth of the downturn. Although some countries were not seriously affected by the
initial stages of the financial crisis, almost all countries were severely affected by the second round effects on the real economy. The lack of trade financing had immense effects on world trade. Malfunctioning financial markets led to an extreme fall in confidence with subsequent effects on global demand. The downturn was widespread and an unprecedented number of countries registered negative growth numbers.

While some observers suggest that remuneration schemes played an important part in the financial crises others claim that its role was insignificant. However, one unintended consequence of financial innovations and more complex instruments was that it enabled traders to create positions with extreme leverage. Therefore the combination of high leverage and potentially unlimited upside rewards did increase the risks in the financial system although its consequences will be difficult to assess.

Why the impact differed so much between countries
The consequence of the crisis differs substantially between countries. The Baltic countries saw their GDP fall by around 15 per cent in 2009 whereas neighbouring Poland registered positive growth. Growth in Japan fell by around 4 percentage points between 2008 and 2009 whereas the fall in China was limited to less than 1 percentage point.

Three factors stand out as the main explanations for the differences in impact. The first concerns how close a country’s financial market was linked with the US/international financial system. The less connected countries witnessed a smaller direct effect from the stressed financial markets. Secondly, countries with prudent macroeconomic policies prior to the crisis have managed much better compared with those countries that had allowed imbalances to grow. Finally, countries with more prudent regulation and supervision of the financial markets have had a more stable development, although the impact on the real economy may have been severe.

A report from IMF provides some preliminary answers to why the impact on growth differed so markedly between different emerging countries. The most important factors were leverage and credit growth. Leverage explained roughly two thirds of the revision in growth forecast for the average country according to the report. Furthermore, countries with a fixed exchange rate experienced on average more than two percentage points larger growth revisions compared with countries with more flexible exchange rates. Furthermore, although the evidence was less robust, the report also finds that countries with a solid fiscal position before the crises had a better growth performance.

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Comparing countries with different experiences, e.g. Canada and Spain to Iceland, the lesson seems to be that prudent regulation and supervision can avoid or at least markedly reduce problems emerging within the financial sector. However, during a global crisis factors outside the financial sector may be more important for the overall development of the real economy in a single country. Especially, if countries fail to pursue sound macroeconomic policies and allow imbalances to grow, the downturn will be more pronounced.

In Canada the financial system performed relatively well during the crisis despite its proximity to the US. This has been attributed to high capitalisation and levels of liquidity, a strong regulatory system and a conservative risk appetite among Canadian financial institutions. Furthermore, the Canadian prudential regulator, the Office of the Superintendent of Financial Institutions (OSFI) established capital requirements that exceeded international minimum standards. In addition, Canadian banks did not originate sub-prime mortgages to any material extent, unlike financial institutions in the United States. According to a Canadian trade association, sub-prime loans make up less than 5 percent of all outstanding mortgages in Canada. Moreover, Canadian banks have a strong incentive to be prudent in their underwriting because they directly bear the risk by holding the mortgages they originate.

Canadian officials and market participants point to a streamlined regulatory framework as providing strength to the Canadian financial system during the crisis. The OSFI has regulatory authority over all entities within a corporate group, not just the holding company or certain subsidiaries. Therefore, the agency’s oversight of banks also includes all of a bank’s subsidiaries, which includes major securities firms. According to some observers, this enhances the regulator’s ability to understand the risks facing the entire institution and gives the regulator the authority to identify and act on potential problems throughout the group.

Spain is another example of a country with conservative banking regulations. Whereas many supervisors neglected the introduction of off-balance-sheet entities, the Spanish banking supervisor insisted that Spanish banks would have to treat conduits and other investment vehicles as on the balance sheet for capital purposes. As a result, Spain to a large extent avoided regulatory arbitrage. Spain also introduced dynamic provisions well ahead of the crisis and part of its usefulness can be seen in the resilience shown so far by most Spanish banks. Despite the strong regulatory system, the real economy was severely affected by the global crisis when the Spanish construction industry went into decline. Housing starts fell by 80 per cent from their peak.

An obvious example of mismanagement regarding the financial sector is Iceland. During only a few years bank’s assets rose from two times the size of the economy to ten times (fig 10). This rapid growth of credits apparently
occurred without any specific actions from the authorities. When the banking sector becomes so much larger than the economy it becomes very difficult to control. Thus the whole country was put at risk by the banking system without any policy response\textsuperscript{17}.

The banks expanded far beyond their domestic base and relied on wholesale funding on the international markets to finance their overseas expansion. Over time actors on the wholesale market became doubtful over the sustainability of the Icelandic banks. Their rapid expansion, loan opaqueness and large exposure to a few companies, often holding companies, reduced the bank’s access to the wholesale market. Instead they turned to retail funding. Partly due to the deposit insurance guarantee system households responded positively. Thus the expansion could continue a little longer.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Icelandic_bank_assets_GDP.png}
\caption{Icelandic bank assets/GDP}
\end{figure}

\textbf{Fig 11 Icelandic bank assets/GDP}

According to the Special Investigation Commission’s report in April, the Government, the supervisor authority and the central bank completely failed to address the relevant issues during the whole period, from the early expansion, over the early warning signals in 2006 and beyond.

A disputed issue is the role of monetary policy. While the Federal Reserve disagrees, according to some observers\textsuperscript{18} monetary policy was too loose over the last decade, especially in the United States. OECD has calculated the difference between the policy rate and “an appropriate” policy rate derived from the Taylor rule.\textsuperscript{19} The result was that Fed rates were too low from early

\textsuperscript{17} The Althingi Special Investigation Commission (2010).
\textsuperscript{18} Bean (2009).
\textsuperscript{19} A monetary policy rule that stipulates how central banks should set interest rates in response to divergences of inflation from the inflation target and levels of the GDP gap.
2001 until the crisis. At one point, in 2004, Fed rates were almost 4 percentage points too low according to this calculation. The policy rate in the Euro Zone was also on the low side but considerably less so.

The effect of trade for emerging market economies was not significant in terms of size, e.g. the degree of openness, according to the IMF report. However, the composition of trade makes a difference. Countries with a large share of manufactured goods were associated with a poorer growth performance, partly due to the large fall in demand for investment goods. The opposite holds for countries with a large share of commodities. Australia is one of the few OECD members that had positive growth in 2009. This is largely attributed to the strong exports of commodities to China. Some Latin American countries were also less exposed to the downturn due to a large share of commodities in their exports.

Summary
Financial crises are not a new phenomenon. The world economy has from time to time been hit by crises, and the current crisis is most probably not the last one. Several lessons can be drawn from comparing previous crises and between the development in different countries during the present crisis. The financial sector has grown very complex and its actors have become very big, sometimes too big to control. These institutions and their products therefore have become very difficult to regulate and supervise. Even the internal control of the financial institutions themselves failed in several cases. Remuneration policies added to the build up of risks. Thus, system-wide risks were much larger than ever before. Moreover, when financial companies become very large in relation to the overall economy, public finances are exposed to large risks.

The political and regulatory systems failed to address several important issues. Most notable was the issue of controlling for system-wide risks. However, countries that did pursue a prudent regulation and supervision were less affected by the crisis.

Another lesson from the present crisis is the importance of pursuing sound macroeconomic policies, especially during booms. Countries that had allowed imbalances to grow also had the largest set-backs during the crisis.
Chapter IV Conclusions and implications for SAIs

This report has shown that the financial crisis was a result of a combination of failures in financial markets, macroeconomic problems and shortcomings in the implementation of policy. The aim of the report is also to take the perspective of SAIs when analyzing the causes and lessons learned from the financial crisis. The scope for a SAI to audit macroeconomic developments is of course limited. However, there are areas related to macroeconomic developments that may well be a part of SAIs audit mandate. This includes an auditing and accountability perspective on government finances. There is a need for sound fiscal policies, once the economic recovery is ensured, in order to uphold long term sustainability of public finances. Auditing governments’ fiscal policies in relation to pre-set fiscal targets may well be one area in which SAIs could play a more important role in the future.

An extensive overhaul of the regulatory structure of financial markets is under way – or at least proposed – in many regions, attempting to address the failures of suitable regulation and supervision of the financial system. Ensuring that suitable accountability is maintained is important for the long run success of this regulatory overhaul. However, the internationalization of regulation and supervision pose a challenge for national SAIs and international cooperation may well be needed.

The financial crisis has highlighted several old and new challenges SAIs are facing in their task of auditing the impact of actions carried out by the executive branches of government. In the following we elaborate on some of these challenges.

Audit of sustainability of public finances

As shown in chapter I, public finances have been severely affected in many countries. A weak initial fiscal position has put the long term sustainability of many countries public finances in question, notably in Greece but also larger countries such as UK and the US have seen a vivid debate over their fiscal outlook. Countries with large surpluses during the boom period have also seen significant deficits. The structural budget surplus was over-estimated in many countries as potential growth turned out to be significantly lower than predicted.20

The crisis has highlighted the importance of sound public finances during boom years in order to be able to manage a crisis. It has also highlighted that the fiscal policy frameworks, such as the Stability and Growth Pact in the EU, have been inadequate to ensure that wind-fall gains during good economic period are not used to finance permanent tax cuts or expenditure increases.

20 See e.g. Kanda (2010).
In coming year’s fiscal austerity will be required in many countries in order to avoid sovereign debt crises. The exit strategies will have to take into account the long term sustainability of public finances and at the same time consider the current economic situation in order not to hamper the present recovery. In order to achieve this, while upholding the market confidence for the public finances, countries will have to make credible budgets and have transparent and correct accounting of public sector finances.

Empirical studies of fiscal rules and fiscal transparency tend to find that both contribute to stronger budget outcomes. The use of transparent long term projections, fiscal rules and numerical targets in the budget process is important because it sets the boundaries for the negotiations between the minister of finance and the line-ministers. Rules can be broken, but it is harder to break a rule if it is specific and concrete. In the absence of an independent referee in the “budget-game”, the rules can be seen as a “commitment technology”, which places the burden of proof on players that want to make short-term gains, without considering the overall long-term fiscal stability.

A strong case can be made for independent reviews of fiscal transparency, the correctness of fiscal accounting and reporting and the adherence to fiscal rules increases the effectiveness of fiscal frameworks. SAIs, as independent authorities, can play a vital role in ensuring that fiscal lessons from the crisis are not forgotten during the next boom.

Audit of governments’ implicit guarantees

The globalization and expansion of financial markets has created large financial groups that pose considerable systemic risk to governments and taxpayers. Combined with inadequate winding-up procedures for banks, governments often have little choice but to support banks using implicit and explicit guarantees which creates a burden on taxpayers and distort market incentives. One of the most important lessons of the financial crisis is that this interface needs to be reviewed and improved.

As the example of Iceland shows, banks may not merely be too big to fail, but may also grow too big to save. The size of the entire banking system in relation to the overall economy becomes an important factor. The fact that the financial sector has grown so large compared to the overall economy imply that the implicit risk to public finances that the state-guarantees pose can in times of crisis threaten the longer term sustainability of the public sector’s financial position. If a severe banking crisis hits an economy the risks in the banking sector can quickly migrate into the balance sheet of the state.

The de facto guarantees for a growing financial sector are an increasing problem. State support increases future risk-taking incentives which in turn
increases the state support. Two broad approaches are possible: redesign of the financial system to reduce the scale of insurable risks; and redesign of the social safety net of banks. SAIs may well consider paying special attention to these issues, both in financial and performance audits.

The crisis has also highlighted the potential cost to the taxpayers that regulatory and supervisory failures combined with an implicit guarantee imply. Furthermore, since the guarantee is not formally issued, it is not priced, but more or less infinite. Implicit guarantees are by definition not visible in the state budget. This leads to an underestimation of the states guarantees and is in a way an error in financial accounts of the state. This is something to which SAIs may well consider paying special attention.

**SAIs’ role in promoting accountability for financial stability**

The regulatory and supervisory structure was fragmented in many countries and regions prior to the crisis. Central banks have a special status of independence in their monetary policy operations. They also have a responsibility in most countries to promote financial stability. However, the concept of financial stability, what it entails and how it is achieved is often not specified. Systemic financial stability is often within the realm of central banks operations, while many countries have separate financial supervisory authorities for the supervision of individual financial market participants. Parliamentary independent review of the operations of central banks to promote financial stability is limited. This creates a gap in the accountability structure and SAIs could play a role in auditing these operations in order to improve parliamentary control. Furthermore, SAIs have a role to play in evaluating the appropriateness of the supervisory structure for financial markets. Since central banks have an important role in upholding financial stability, its work may need to be included in SAIs’ audits in order to increase parliamentary control and thus increase accountability. Auditing central banks’ work with financial stability may fall outside the audit mandate of some SAIs. However, the financial crisis has highlighted the importance of ensuring accountability in this area.

The crisis has also demonstrated that the execution and implementation of policies in other areas – in particular housing – have had consequences for financial stability. Housing related policies of various kinds play an important role in many countries. They vary from tax policies (of property) to public ownership of lending institutions or investments subsidies. In several previous crises as well as the present one, changes in these policies have affected financial stability. SAIs can audit the effectiveness in the execution of these policies and have done so in some countries. Given the knowledge we now have it is important also to include the policies’ potential effects on financial stability in our audits.
A need for international coordination and cooperation

One lesson from the crisis is that while the financial sector has grown globally, regulatory structures did not keep pace and remained to a large extent national. The overhaul of the regulatory and supervisory structure now being performed in *inter alia* the Financial Stability Board, the BIS, the G20 and the EU, has shifted focus towards more international rules, regulation and supervision. It is important for SAIs to monitor the extensive overhaul of the regulatory framework now being proposed. SAIs could for instance review the adequacy of new regulatory frameworks and its processes once they are in place, the sharing of information between supervisors and SAIs respective countries’ compliance with international standards. SAIs will also have to increase their cooperation across borders in order to audit the effectiveness of this new regulatory structure. In the EU this issue is of particular importance since EU-wide bodies are created in this field. In general these issues are made all the more important by the fact that the crisis has revealed the potential costs to tax payers that a flawed regulation and supervision may cause.

Promoting transparent, reliable financial reporting

The response to the global financial crisis highlighted the need for governments to have transparent, reliable financial reporting to effectively communicate the financial impact to the government resulting from the actions that were taken. The foundation for transparent, reliable financial reporting includes the preparation of financial statements by governments, on an accrual basis of accounting, using accounting standards developed by an independent standards setting process acting in the public interest, and the audit of such financial statements using generally accepted auditing standards.

Governments must be held accountable for the level, quality, and cost of services they provide. To do this, governments must prepare financial statements that are transparent and that clearly show how they have used and are planning to use funding entrusted to them by taxpayers and other contributors. Such reporting should include the government’s actions in response to the financial crisis.

Accounting standards used to prepare government financial statements play an important role for transparency and accountability. The size of government—both in their public debt operations and in their operations in domestic markets—makes it vital to have accounting standards that promote transparency and provide criteria for consistent reporting. More specifically, a set of accrual-based accounting standards is necessary to properly reflect the full consequences of policy decisions. Cash basis accounting standards, especially when employed by governments in large interconnected economies, reduces accountability and transparency. In addition, the accounting standards should be developed by an independent standards-setting process that serves in the public interest. The INTOSAI
Subcommittee on Accounting and Reporting has issued a paper on the importance of an independent standards setting process.

Further, to provide credibility to the financial statements, they should be audited by an independent auditor using generally accepted auditing standards. Users need assurance that the financial statements they rely on, in order to make important economic decisions, are credible, transparent, and present a true and fair view of all of the government’s financial activities.

At the international level, the International Federation of Accountants (IFAC) established two independent standards-setting bodies. The International Public Sector Accounting Standards Board (IPSASB) establishes accounting and financial reporting standards for government entities. The International Auditing and Assurance Standards Board (IAASB) establishes generally accepted financial audit and assurance standards. Also, the new ISSAIs, based on IAASB audit standards, will help auditors to apply the audit standards to government audits.

In summary, there is a growing recognition, as a result of the financial reporting related to the fiscal crisis, that the transparency and reliability of some government financial statements could be improved. Consequently, in such cases, SAIs should continue to work to promote transparent, reliable financial reporting by such governments.
References


Appendix I. The Boom-Bust process

Financial crises have always hit the world economy from time to time. Despite this fact, there is no generally accepted theory in the field of economics that fully explains, even less can predict, such crises. Nevertheless, the literature on financial crises is immense and some common features of such crises can be identified. Figure A1a and A1b summarize some stylized features of a typical boom-bust process that ends in a financial crisis.21

During the initial boom phase the economy is exposed to positive impulses. These can be of different kinds, e.g. a deregulation of a financial system, opening up of capital accounts, capital inflows and/or falling real interest rates. This impulse then multiplies in the economy as growth picks up, a credit expansion starts and asset prices rise. The financial sector expands and the “sophistication” of financial services increases through financial innovation. The result is a booming economy with high growth driven by domestic demand. This typically leads to a worsening current account and high level of leverage in the economy.

However, a financial bubble cannot keep growing forever. As the boom continues the economy becomes more and more vulnerable to negative impulses. For some reason the perception of risk changes. The willingness to take risks often rises over an extended period. But when the attitude to risk reverses it is usually very swift. The initial negative impulse that turns the boom into bust varies from crisis to crisis, but typically includes a rise in real interest rates, falling asset prices, e.g. house prices, and/or an international downturn. As was the case during the boom phase, these impulses multiply in the economy. As asset prices fall people and companies become over-indebted, the perceived increase in negative risks is reflected in a decline in the supply of credit. Investors may have to sell assets to meet liabilities, inducing a vicious circle of debt-deflation forcing assets prices even lower.22 The real economy slows down as savings increase. The boom turns into a bust, with financial crisis, bank failures and depression as a result.

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21 Figure A1a and A1b build on Jonung et al (2009)
22 Irving Fisher wrote in 1933 on debt-deflation: "Then we have the great paradox which, I submit, is the chief secret most, if not all, great depressions: The more people pay, the more they owe".
Figure A1a. The boom phase. A stylized picture.
1. **Starting-point**
   - Overheated, "financially vulnerable economy"
   - Overvalued currency
   - High inflation

2. **Negative impulses**
   - Rising real rates of interest
   - Capital flight
   - International downturn or crisis
   - Falling house prices

3. **The financial sector**
   - Decreasing demand for credit
   - Decreasing supply of credit
   - Pessimistic risk assessment

4. **Asset markets**
   - Declining asset prices (Stock and real estate)
   - Negative wealth effects
   - Debt deflation
   - Overindebteness

5. **The real economy**
   - Declining investments
   - Declining consumption
   - Rise in savings
   - Fall in imports

6. **Bust/Financial crisis**
   - Financial crisis
   - Depression with rising unemployment
   - Expansionary monetary and fiscal policies
   - Budget deficits

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Figure A1b. The bust phase. A stylized picture.