JANUARY 2010
No. 3

DOCUMENTS AND DEBATES

FINANCIAL CRISIS
ECONOMIC CRISIS

BANQUE DE FRANCE
EUROSYSTÈME

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292–0003

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BOXES

This document is a follow-up to the second issue in the *Banque de France's Documents and Debates* series* that was devoted to the financial crisis and published in French in February 2009.

In 2007 and 2008, the global financial system experienced a crisis of unprecedented magnitude. It progressively spread to different markets, different players, and different countries before turning into an economic crisis, i.e. affecting the real economy. Indeed, the interactions between the financial sector and the real economy tend to be mutually reinforcing through, in particular, the bank capital channel.

Historically, the severity of economic crises has reflected the specific circumstances prevailing when they first appear and the responses of public authorities both in terms of managing banking crises and macroeconomic policy. As regards the current crisis, most governments and central banks of the countries concerned implemented economic policies aimed, firstly, at supporting the banking sector and restoring the normal functioning of markets and, secondly, at minimising both the propagation of the crisis to the real economy and its consequences. Everyone agrees that the actions taken were appropriate and effective, both in terms of their implementation (rapidity, cooperation and convergence, etc.) and their content (supporting banks' capital and liquidity, implementing measures to foster economic growth, etc.).

Moreover, this crisis has afforded market participants of the international financial system (private credit institutions, regulators, central banks, etc.) an opportunity to reflect on the current system's limitations and the need for a new global financial order. In this respect, G20 initiatives have marked a return to regulation through both the extension of the scope of its application and the international harmonisation of the accounting and prudential standards on which such regulation is based. Major initiatives in numerous areas have been undertaken: strengthening the microprudential supervision of credit institutions, fostering greater resilience of the system by modifying incentives (compensation rules), adopting an overall approach to financial system risk (macroprudential approach), reforming the architecture of international institutions and financial supervision (increasing the representation of emerging countries, organising micro- and macro-supervision in Europe).

In the last few months in particular, the experience of past crises has been extremely useful: it has taught us that the type of measures taken, the speed at which they are implemented and their sequencing largely determine the magnitude and the final economic cost of the crisis.

NB: The authors were not able to update at the time of publication all of the figures cited in this issue, which were the only ones available when the contributions were written.

* *The first two issues of the* Documents and Debates *series are only available in French, and the first issue is only available online.*

Central banks, which are major stakeholders in the global economic and financial system, have a key role to play not only in the management and resolution of crises but above all in preventing them. Aside from their crucial role in implementing a new macroprudential policy, they must communicate on prevailing market dynamics, give early warning in the event of major risks and pass on the lessons learned from the past.

Thus, the Banque de France is pursuing, with this third issue of *Documents and Debates* devoted to the transition from a financial crisis to an economic crisis, its objective of providing information and sharing economic and financial facts and analysis.

PART 1

THE ECONOMIC AND FINANCIAL CRISIS

The major phases of the financial crisis

This chapter is a summarised version of the Banque de France's *Documents and debates No. 2* on the financial crisis published in February 2009 (in French only). It was thought necessary to reproduce it here to explain the transition from a financial crisis to a crisis affecting the real economy.

The financial and then economic crisis that has unfolded since the summer of 2007 has occurred in three phases affecting first the markets, then banks and finally the real economy.

Indeed, we have moved from a market problem (subprime and their spread via structured products) to a financial crisis (the short-term refinancing market) and then to a banking crisis, which in turn has had macroeconomic repercussions.

1| WHAT TRIGGERED THE CRISIS?

1|1 Underestimation of risk

In an environment of low interest rates, investors sought to increase their returns by investing in high-yield, but risky products. On account of an extremely favourable economic environment (low inflation, strong growth and financially sound companies), investors underestimated the risks attached to these products.

1|2 A banking system with blurred boundaries

In the United States, subprime loans were granted by brokers that were not banks and were therefore not subject to the same quality of supervision as the latter. Certain specific financial vehicles known as conduits or SIVs (structured investment vehicles) played a similar role to banks, borrowing over the very short-term to finance very high-yield long-term structured products, thus making substantial profits in good times. However, they were not subject to the same regulatory requirements as banks and found themselves unable to refinance themselves and therefore to continue with their activity when liquidity dried up.

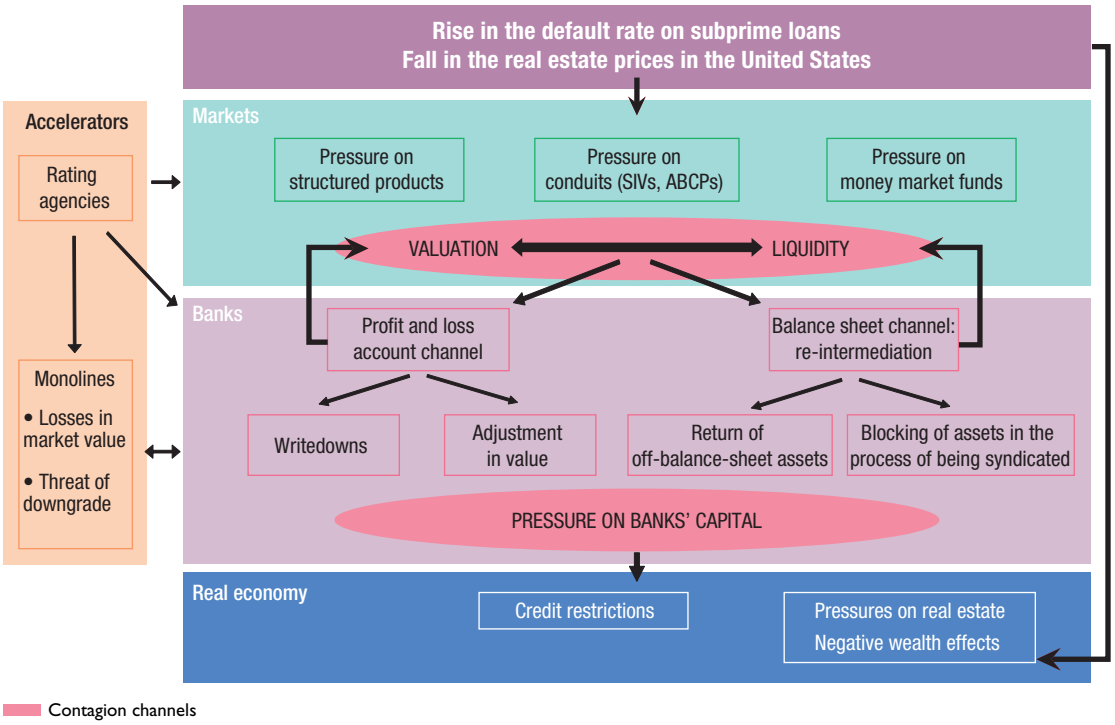
1|3 Financial innovation and globalisation

The years preceding the crisis were marked by the creation and development of so-called structured financial products, which consist in constructing financial instruments using different «underlying» elements, including these subprime loans. The subprime crisis spread to some structured products as the latter were partly composed of them, and then to structured products across the board since there were doubts as to the actual composition of these products.

2| THE ACCELERATION OF THE CRISIS

By nature, the functioning and value of structured products are difficult to grasp for an investor. In order to facilitate their sale, the rating agencies (Moody's, Standard & Poor's and Fitch Ratings) assign a rating to them that is intended to guide investors in their choices. The non-repayment of subprime loans, some of which went to make up these products, led to their ratings being downgraded and naturally to wariness on the part of investors. This factor explains the transition from a market phenomenon to a banking crisis since the drop-in value (rating) of structured products led to financing difficulties for the SIVs that held them on their balance sheet. These same vehicles then drew on the liquidity lines that had been granted to them by banks. Banks then took back onto the balance sheets the assets concerned that were embedded in these vehicles («re-intermediation»), thus jeopardising their own balance sheets. Recorded in accounting terms at their market value, the valuation of these assets collapsed, prompting investors to withdraw and triggering a vicious circle involving the dry-up of liquidity and sliding valuations. This placed strong pressure on banks' capital, with banks reducing their lending activity, and turned the financial crisis into a crisis affecting the real economy.

A crisis in three phases: markets, banks and the real economy



Source: Banque de France, Financial Stability Directorate.

Box 1 Lehman Brothers – a seismic shock

The collapse of Lehman Brothers on 15 September 2008 marked a major turning point in the crisis, following which the tensions on financial markets reached their peak. It triggered:

A deep crisis of confidence regarding the solvency of financial institutions:

• *bank default risk premia reached record highs before subsiding in response to the measures taken by central banks and by governments (see Chapters 3 and 4).*

A climate of wariness that led to the financial markets freeze:

• *against this backdrop, there was a flight to quality that was reflected in strong investor preference for government bonds;*

• *investors withdrew massively from the riskiest assets, notably from equity and credit markets and also hedge funds;*

• *the growing wariness between market participants and between banks in particular, led to a freeze of the interbank money market, thus strongly reducing transactions between banks, and a surge in counterparty risk premia.*

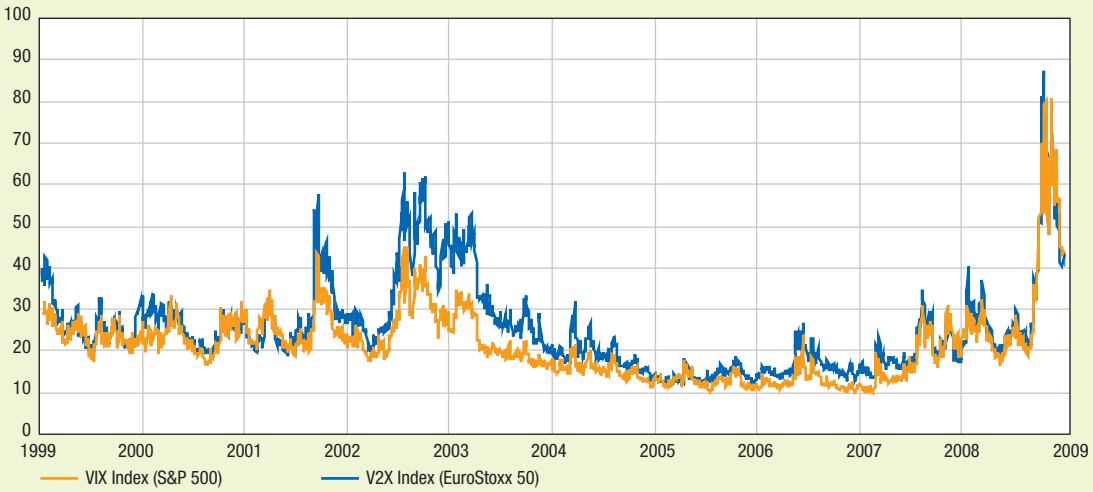
The collapse of Lehman Brothers accentuated the flight to quality: demand for US Treasuries pushed the yield on 3-month T-bills to historical lows, even dropping below 0%.

Risk aversion
Common factor of risk aversion

Estimated by principal component analysis of several risk premia (estimated from credit spreads)
Sources: Bloomberg, JP Morgan, Merrill Lynch; calculations: Banque de France, Financial Stability Directorate.

Volatility
Indices of volatility on the S&P 500 and EuroStoxx 50

(%)



Source: Bloomberg.

.../...

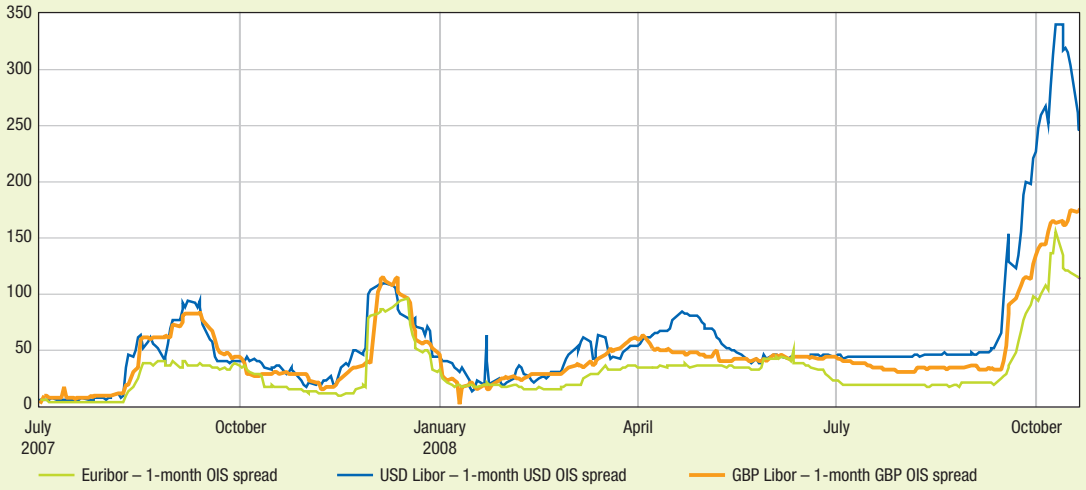
Flight to quality

(yield on 3-month T-bills)

Source: Bloomberg.

Counterparty risk premia on the interbank market

(basis points)



Source : Bloomberg.

The financial mechanisms at the root of the crisis

1| FINANCIAL MARKETS AND LIQUIDITY[1]

1|1 Disintermediation, liberalisation, financial deregulation and securitisation ...

Disintermediation, financial deregulation and liberalisation and securitisation are probably the most striking developments in financial markets over the past decade. They have not only deeply changed the financial landscape but also the scope of liquidity. Strong growth in the money supply and credit has been a key driver for the cheap financing conditions on financial markets.

This «easy» finance has exacerbated the temptation for investors to take on more risks and high levels of leverage, thus fuelling the expansion of credit and aggregate money. The elimination of a number of structural barriers between investment banking and retail banking also has facilitated credit flows from originators of loans to issuers of debt products. This has also fostered competition within the financial sector and given impetus to financial innovation. Finally, securitisation has not only allowed banks to make financial assets liquid but has also created new investment opportunities for the banking sector involving the origination of loans for the purpose of packaging and selling them as securities.

1|2 ... have contributed to the emergence of the «originate and distribute» business model

These different trends have given rise to a new risk transfer model whereby banks originate loans and then distribute the underlying credit risk to a pool of investors by means of dedicated instruments. Previously, loans were mainly originated by banks, which kept them on their balance sheet and monitored them for the whole of their lifetime. Securitisation has given them the possibility of offloading credit risk from their balance sheet and transferring it to other investors. The valuation of complex structured instruments has become quite a challenge.

2| THE MAIN DRAWBACKS OF THIS BUSINESS MODEL

2|1 The presence of imperfections on the credit market

In this model, neither party to the transaction has an incentive to assess the viability of the assets concerned, thus creating a problem of moral hazard on both sides:

• issuers of loans because they expect to transfer credit risk to other investors;

1 *Source: Banque de France Occasional paper No. 4 «A primer on the subprime crisis», February 2008. The full text can be consulted at the following address:* www.banque-france.fr/gb/publications/telechar/debats/primer_subprime_crisis.pdf.

• buyers of loans, who intend to repackage them, because they know that the ultimate clients are mainly guided by the credit rating of the underlying assets.

Asymmetric information thus plagues every step of the process and constitutes a powerful source of contagion. On top of this, a key condition for such a system to operate is that liquidity is permanently made available to each market participant involved in the process.

2|2 Valuation

By nature, structured products are not very liquid. The main reason is that they are structured to precisely suit the characteristics and risk profile required by their buyer. This restricts their ability to be sold on later to other investors who may not have the same preferences or needs. This gives rise to an element of circularity since fair valuation must be based on a market price in accordance with IFRS requirements, the ability to accurately price an asset itself depends on there being sufficient liquidity in the market and liquidity, in turn, depends on valuation.

In this set-up, credit rating agencies have an essential function as they gather and verify information concerning borrowers. There are however two striking weaknesses in this chain:

• rating agencies regard themselves as responsible for assessing credit risk alone and their ratings therefore do not encompass liquidity risk, whereas investors often believe that they do;

• the metric used for rating structured products is identical, in terms of presentation, to that used for traditional bond products, whereas the risks are greater.

2|3 The relative inadequacy of capital to risk in the securitisation model

Until recently, new entities, such as conduits and SIVs, performed maturity transformation on a significant scale without any capital to absorb shocks. However, most of them were equipped with back-up lines of credit or other guarantees by the sponsoring banks which substituted for equity which otherwise would have been required for these entities to issue highly rated AAA commercial papers. Securitisation does not fully shield banks from credit risk on the assets transferred. First, originators are used to being exposed to the first defaults on the loans they sell as they generally keep part of the risk. Second, the conduits and SIVs that specialise in acquiring these products benefit from large contingency credit lines from the banks that set them up, precisely to deal with liquidity risk. When conduits call on their credit lines, bank balance sheets can expand considerably, thus lowering the amount of excess capital available to grant new lending.

The macroeconomic impact of banking crises

Banks play a key role in financing the economy and when their financial situation prevents them from performing this role, lending is jeopardised. If we look at all countries, including emerging economies, we see that past crises lasted for an average of three to four years. The cost of these crises for public finances was equivalent to 13% of GDP and they caused a cumulative drop in GDP of nearly 20% over the same period.

The difference between these two effects is noteworthy, since the impact of a crisis on GDP represents a loss of wealth for a nation, whereas a larger fiscal deficit raises the problem of sharing the burden of financing the deficit among economic agents through higher taxes or a larger debt load passed onto future generations.

The lessons have been learned from these financial crises in all countries. We now know that they call for rapid and orderly action to recapitalise the banking system, to recreate monetary and financial conditions that are favourable for lending to the economy and to provide temporary support for economic growth through appropriate fiscal measures.

1| ECONOMIC DEVELOPMENT REQUIRES A HEALTHY BANKING SYSTEM

Economic development requires investment in productive assets and the constitution of working capital to build up inventories and finance the production process. This means that business and consumer loans to finance production and consumption are crucial. There are two channels for obtaining this financing: issuance of securities on financial markets and bank lending. These two channels are complementary in modern economies. Yet banks clearly play a central role, especially in the euro area.

If a banking system is in crisis, it cannot perform its intermediation function properly, it stops producing new loans and fails to roll over maturing loans, leading to a credit crunch. Two mechanisms may be in play:

• **banks' capital inadequacy**. Prudential rules limit banks' risk exposure in proportion to their capital. In an economic or financial downturn, losses may cut into banks' capital. This effect may be aggravated by accounting rules that require certain assets to be marked to market. At the same time, risks are often measured by referring to credit ratings attributed by agencies. Borrowers' ratings are regularly downgraded in times of crisis and such downgrades increase banks' capital requirements;

• **banks' liquidity shortage**. When markets seize up and banks are not sure of refinancing their loans, they stop lending.

2| THE COST OF BANKING CRISES

Every bank crisis is different, even though they all share some common characteristics. As a general rule, they come after a self-perpetuating cycle of rapid credit expansion and soaring stock markets and/or real estate markets, where the rising value of assets used as loan collateral justifies new loans, even though their intrinsic business justification is unproven. Any external shock that jeopardises the value of these assets will highlight the poor quality of the loans and trigger a banking crisis. The ensuing losses eat into banks' capital and the most exposed banks become insolvent. The markets become totally illiquid for as long as uncertainty about the scale and distribution of the losses persists.

It is hard to calculate the economic cost of a crisis. Ideally, we would be able to compare actual growth to what it would have been without the banking crisis. Therefore, we have to make some conventional estimates that provide us with some orders of magnitude. The following table, which only covers developed countries, is taken from an IMF working paper that analyses the impact of banking crisis around the world on growth between 1970 and 2007.

OECD countries	Systemic banking crisis (starting date)	Share of non-performing loans at peak (% of total credit)	Gross fiscal cost (% of GDP)	Output loss (% of GDP)	Minimum real GDP growth rate during crisis (%)
Spain	1977		5.6		0.2
Norway	1991	16.4	2.7		2.8
Finland	1991	13	12.8	59.1	-6.2
Sweden	1991	13	3.6	30.6	-1.2
Japan	1997	35	14	17.6	-2.0
United States (savings & loans crisis)	1988	4.1	3.7	4.1	-0.2

Source: Laeven and Valencia (2008).

The scale of the crises varies according to the specific circumstances surrounding them, but it also depends on the governments' responses to the banking crises and their macroeconomic policies.

The experience of previous banking crises has shown us that the nature of the measures taken, their speed and sequencing largely determine the scale and the cost of the crisis. Restoring a healthy banking system, meaning one with substantial capital and satisfactory profitability, is a prerequisite for any effective stimulation of output by the usual macroecomic policy measures, such as various types of fiscal stimulus or interest-rate cuts.

Box 2 What impact will the current crisis have on long-term growth?

Past financial crises have shown that there is a great risk that the current crisis will dim the outlook for growth in advanced economies. Under the production function approach, the outlook is ultimately determined by factors of production (capital and labour) and the efficiency of the mix of these factors, as measured by Total Factor Productivity (TFP). Yet, all of these components could be affected by the crisis, albeit to varying degrees, depending on the timeframe.

Channels and timeframes for transmission of the impact of the crisis to potential growth

Timeframes / Factor of production	Short term	Medium term	Long term
Capital	Greater impairment of assets Investment cycle Financial constraints	Higher cost of capital	
Labour		Hysteresis*	
Total Factor Productivity	Ageing of capital		Sector reallocation R&D

**see glossary.*

Transmission mechanisms

The impact on capital stock could be rapid and lasting

The crisis may lead to a persistent drop in productive capital as investment is cut and unused production facilities are shut down permanently. So far, the phenomenon primarily concerns very small enterprises, but it has been affecting small and medium-sized enterprises more in recent months. If there is a weak recovery in investment after the crisis, the impact of the crisis on capital stock could be a lasting one.

The potential employment level could fall temporarily in the medium term

A big increase in unemployment and the permanent reduction of output in certain sectors could lead to persistent high unemployment, regardless of changes in business conditions. Workers losing their jobs in sectors lastingly affected by the crisis may not find work in more dynamic sectors. The increase in structural unemployment could also lead to slower growth, since some non-participants may be discouraged from entering the labour market.

The crisis could have incremental and lasting effects on the efficiency of capital and labour

In the short term, TFP may be affected by the ageing of capital caused by the fall in investment. However, most of the impact of the crisis on TFP should appear incrementally as research and development (R&D) spending is cut. Businesses facing financial constraints during a crisis may cut back their R&D spending.

Reallocations of activity between sectors following any large-scale crisis may also lead to a fall in the level or even a slowdown in the growth of TFP, if there is a lasting dip in the activity of some sectors with high productivity.

Possible scenarios

Analysis of the transmission channels from the crisis to potential GDP shows possible effects on both the level and growth of GDP in the shorter and longer term, and consequences that may be more or less long lasting.

.../...

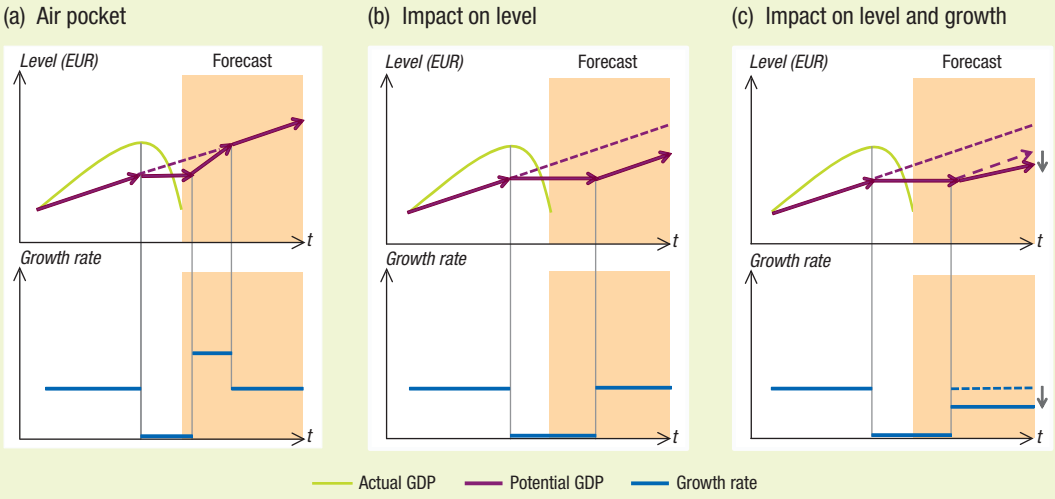
Three scenarios can be considered (see diagrams below):

(a) the "air pocket" scenario, in which potential GDP and GDP growth are not lastingly affected by the crisis and can be restored rapidly;

(b) a scenario in which the level of potential GDP is lastingly affected by the crisis and in which GDP growth gradually returns to the level seen before the crisis;

(c) a scenario in which potential GDP and GDP growth are both affected in the long term.

Diagrams showing the three scenarios for the level and growth of potential GDP



The most plausible scenario

The three scenarios under consideration above are all possible at this point, given the fragility of real-time potential GDP measurement, which means that the analysis of the impact of the crisis on potential growth is only robust ex post. However, the following considerations lead us to think that Scenario b, with an impact on the level of potential GDP in the advanced economies, is the most plausible, without totally ruling out the possible impact on the potential GDP growth rate considered in Scenario c.

Recent economic literature has documented past financial crises quite thoroughly. It shows that financial crises do lead to an impact on the level of potential GDP, with losses averaging 4% in the most severe cases.

The relatively long-lasting impact that a crisis has on the level and growth of potential GDP can probably be attributed to the procyclical nature of R&D spending confirmed by actual observations, especially when businesses are facing financing constraints, as is likely the case in the current crisis. Furthermore, a worldwide crisis is likely to aggravate the impact of these constraints. If only one country is affected by a crisis, it could benefit later from continuing innovation in other countries where R&D spending is not being cut. On the other hand, when many countries cut R&D spending simultaneously, the loss of potential GDP is very likely to be long lasting.

The scale and speed with which measures to support growth and the financial system are implemented in various countries should attenuate the risk of economic disruption, especially in the financial system, where disruption could have a permanent impact on potential growth (Scenario c).

3| THE DEFLATION RISK

The rapid drop in inflation, against a backdrop of financial crisis and a sharp economic slowdown, leads us to consider the risk of deflation, which is a situation that combines falling prices with a long-lasting and severe economic crisis. Not every drop in prices is synonymous with deflation. We must also make a distinction between deflation and the more positive circumstances of disinflation.

3|1 Definitions

Inflation is a continuous and lasting rise in the general price level. It is not an instantaneous shock or a rise that is restricted to certain goods. It is a permanent and generalised process. Inflation is driven by expectations: businesses and employees adjust their prices and wages upward because they expect prices to rise.

Deflation is a permanent and generalised process of falling prices. It is not deflation if only certain prices fall. For example, technological progress has driven down the prices of portable computers and hi-fi equipment. But this is not a case of deflation.

Disinflation is a slowing of inflation or an occasional drop in the general price level. For example, it is disinflation if the inflation rate drops from 3% per year to 1% per year. On the other hand, it is deflation if price changes turn negative, dropping by 1% per year and this decline is expected to last.

3|2 How and when does a deflationary spiral start?

Disinflation is a good thing because it increases households' purchasing power. But deflation is dangerous in the long term, because it can trigger spirals that are hard to escape from and may cause or amplify a recession. There are three mechanisms at work in a deflationary spiral:

• households expect prices to continue falling, which means that they put off purchases of durable goods. This reduces the aggregate demand for businesses' output. At the same time, businesses are tempted to reduce their output and their demand for labour because they expect their markets and their profits to shrink, which increases unemployment, reduces wages and decreases households' disposable income;

• deflation automatically increases the real cost of debt[1], which is not linked to prices as a general rule. This increase in the cost of borrowing weakens the position of borrowers, especially businesses. This can lead them to cut back their investment. At the same time, the heavier debt load of households may lead them to increase their savings, thus creating a self-perpetuating cycle that amplifies the fall in aggregate demand;

• deflation may also paralyse monetary policy since it is impossible to cut interest rates below zero. But falling prices mean that real interest rates are highly positive, even though slower growth or recession actually calls for real interest rates to be negative.

1 *This is the "debt-deflation" phenomenon that I. Fisher described in the 1929 crisis.*

Transmission channels from the crisis to the real economy

The crisis was initially limited to the financial markets, but it quickly spread to the "real" economy with significant effects. The classic opposition of the real economy and the financial economy is primarily a practical matter: the real economy refers to the ends of economic activity (trade, consumption, jobs, etc.) and the financial economy deals with the means used to finance economic activity (loans, equities, bonds).

Two main channels carried the contagion:
- the decline in financing for the private sector;
- the impact of negative wealth effects on consumption and employment, which drive growth.

1| FINANCING FOR THE ECONOMY THROUGH BANKS AND MARKETS

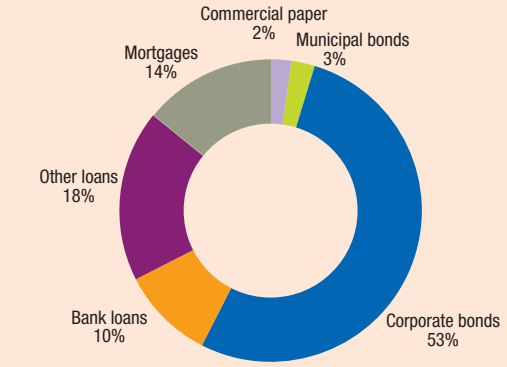
Financial and non-financial corporations have traditionally turned to two sources of financing:

- bank lending, which is the most commonly used source in Europe, especially in the euro area;

Debt of non-financial corporations

United States (September 2008)

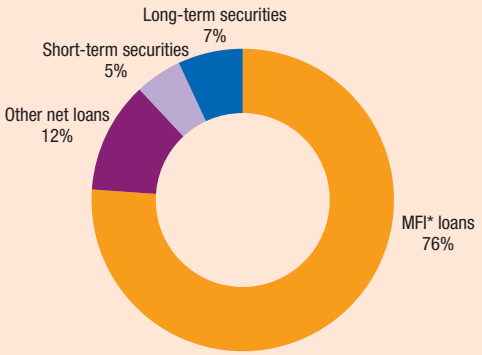
(as a %; total= USD 7,018 billions)



Source: Fed.

Euro area (June 2008)

(as a %; total= EUR 6,171 billions)



**see glossary*
Source: ECB.

• market financing, which is more commonly used in the United States. Banks and non-financial corporations (NFCs) issue securities on the markets with different maturities, depending on their needs (short-term cash requirements, financing requirements for structural investment).

Both sources of financing dried up in the third quarter of 2008: the markets seized up suddenly as investors refused to buy securities, even though they were riskless, and banks stopped lending to each other on the interbank market for fear of counterparty risk and tightened up their credit standards for consumer and business loans.

1|1 The reversal of the credit cycle (in France)

The growth of lending to non-financial corporations has slowed steadily since the second quarter of 2008

The gloomy economic environment led to a sharp drop in NFCs investment and merger and acquisition deals. The growth of outstanding loans slowed steadily after that, falling to 0.4% in annual terms in August 2009.

At the same time, banks' lending rates reflected the fall in market rates, particularly for large loans of more than one million euros. Furthermore, the Banque de France lending survey showed that **the tightening of bank credit standards has gradually eased since the beginning of 2009, especially for large companies**, and the decline in demand for business loans has slowed somewhat.

Since the last quarter of 2008, the decline in bank loans to NFCs has been partially offset by the rebound in large corporations' issues of medium-term and long-term securities made possible by the gradual return to normal financing terms on the markets.

Lending to households improved in the second half of 2009

The annual growth rate of housing loans declined steadily in 2008. The decline stemmed from a combination of factors, including a slump in the real estate market, with falling transaction volumes and prices starting to slip, slower economic growth, as the macroeconomic outlook turned gloomy and unemployment climbed, and tighter bank credit standards.

The annual growth rate of housing loans continued to decline into the third quarter of 2009, standing at 3.8% at the end of August. However, banks' responses to the lending survey indicate a slight recovery in demand from households since the second quarter, driven by a brighter economic outlook and renewed progress on property development projects that were shelved in 2008, along with an easing of bank credit standards and lower rates on housing loans, reflecting lower market rates. The monthly production of new housing loans, which had been flat at the beginning of the year, seems to be showing signs of recovery.

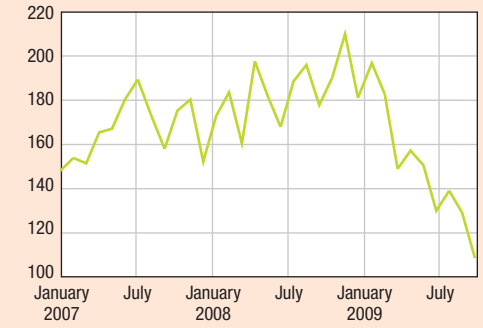
1|2 Short-term financing: the commercial paper market

Market financing raised on the bond and money markets accounts for less than 15% of non-financial corporations' debt in Europe. The bulk of European NFCs' debt is in the form of bank loans. The proportions are the opposite in the United States, where businesses raise large sums on the money market by issuing "US commercial paper", which is made up of debt securities maturing in less than a year. These are identical to the French *billets de trésorerie* (BT) [2] and euro commercial paper (ECP), which is traded in London. Even though the respective proportions of market financing differ in Europe and the United States, businesses on both sides of the Atlantic have sharply reduced their use of this type of financing. In the United States, outstanding commercial paper in the non-financial sector, which had stood at more than USD 200 billion before the crisis, fell to slightly more than USD 108 billion in September 2009. Non-financial sector issuance on the ECP market was firmer until the third quarter of 2008, but it started to decline steadily at the beginning of 2009. Outstanding non-financial ECP issues fell from nearly EUR 200 billion to EUR 148 billion in September 2009. In France, total outstanding commercial paper fell from a maximum of EUR 65 billion in June 2007 to USD 60 billion at the end of 2008 and USD 42 billion in September 2009.

In any event, access to commercial paper markets is fairly selective, since ratings play an important role in determining the interest rates paid by issuers. In France, for example, small and medium-sized enterprises are not active on this market. Access is only for businesses incorporated as joint-stock companies and the minimum BT issuance amount has been set at EUR 150,000. There are some 70 active issuers in the market, with public sector entities, such as Acoss (social security), Unedic (unemployment insurance), Cades (social security debt fund) and EDF in the top ten, along with major French companies, such as Axa, Danone, Carrefour and LVMH. The major issuers also include non-resident companies, such as General Electric, Arcelormittal and Volkswagen.

United States: Outstanding non-financial USCP

(USD billions)

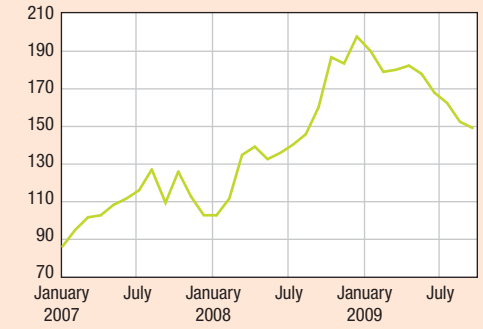


Source: Federal Reserve.

ECP market non-financial sector

ECP ECD corporate + governments

(EUR billions)



Source: Dealogic.

France: Outstanding BTs (commercial paper) in all currencies

Resident and non-resident issuers

(EUR billions)

Source: Banque de France.

2 *The Banque de France monitors issuers' compliance with issuance requirements. It has the power to suspend or ban the issuance of issuers who fail to comply with the provisions in force. The Banque de France periodically publishes statistics on issuers of money market securities and posts the relevant financial presentation documents to its website. Issuers must report buybacks and early redemptions of their securities to the Banque de France.*

1|3 Medium-term and long-term financing: bond markets

In order to meet their long-term financing requirements, businesses issue bonds of varying maturities. Since the end of 2008, they have coped with the contraction of bank lending by seeking more financing on debt markets. There has been rapid growth of bond issuance by non-financial entities, but the markets are more selective and the cost of borrowing has increased in France and the euro area.

Financing terms have improved since the beginning of 2009 and corporate bond issuance has returned to more traditional volumes and frequencies.

The European bond market has seen several trends:

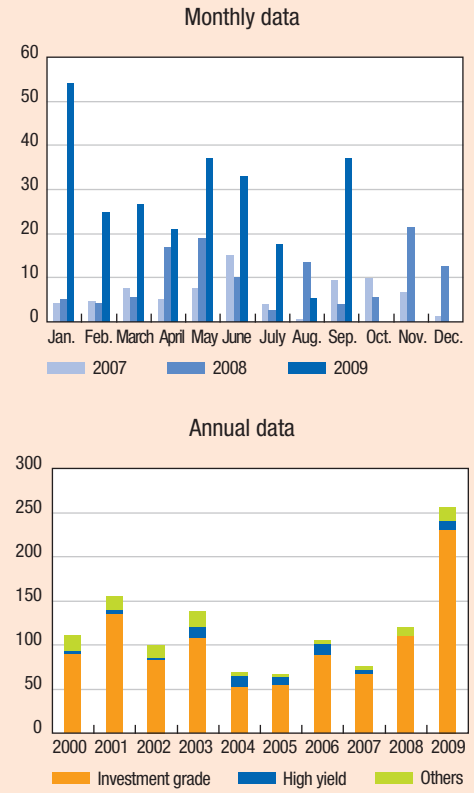
• issuance volume was exceptionally high at the beginning of 2009 and has since stabilised;

• the average maturity of bonds has grown longer with each passing month, which is a sign that long-term investors have returned to the market;

• corporate spreads have narrowed in recent months, translating into lower cost of borrowing. The narrower spreads have inverted the ranking of risk premiums with regard to the unguaranteed banking sector, with lower risk premiums for industrials than for banks at the same maturity, even in the long term.

NFCs' bond issuance in the euro area

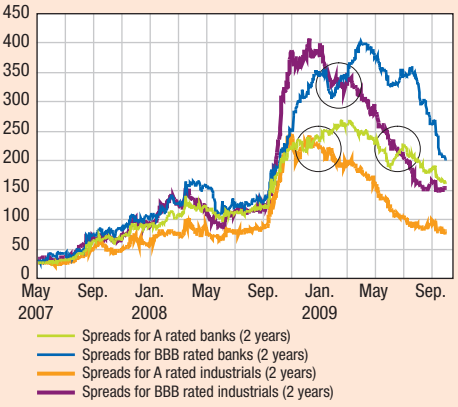
(EUR billions, end-September 2009)



Source: Dealogic.

A and BBB rated corporate spreads versus 2-year sovereign issues

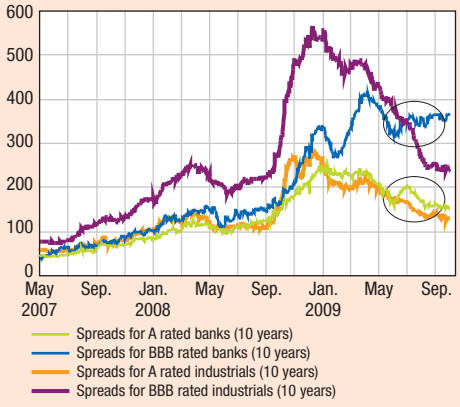
(basis points)



Source: Bloomberg.

A and BBB rated corporate spreads versus 10-year sovereign issues

(basis points)



Source: Bloomberg.

2| DECLINE IN THE FINANCIAL AND REAL ESTATE ASSETS OF HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS

The financial situation of the private sector worsened in terms of the supply of new financing (see above), as well as in terms of financial and real estate assets accumulated in the past. Non-financial corporations and households were hit hard by the sudden and substantial drop in equity and real estate prices.

American non-farm non-financial corporations saw the value of their net assets fall by 17% overall between the end of 2007 and the second quarter of 2009. The primary cause of the decline was the fall in the value of their real estate assets and, to a lesser extent, their financial assets. In France and Germany, businesses' net financial assets declined between the middle of 2006 and the middle of 2007 as the value of their assets rose more slowly than that of their liabilities.

American households saw the net value of their assets plunge by approximately 20% between the end of 2007 and the first quarter of 2009. As a percentage of disposable income, this decline is greater than the wealth accumulated over the five previous years. However, the net value increased slightly, posting a 4% rise in the second quarter of 2009. In the euro area, differences in portfolio allocations meant that trends varied widely between countries. In addition, French households' real estate assets certainly lost much more value than those of German households because real estate prices followed very different paths, declining by more than 10% from their peak in France and remaining virtually stable in Germany.

This decrease in the financial and real estate assets of private non financial agents may affect growth through three main mechanisms.

Firstly, households consider a lasting decline in their wealth as a decrease in their permanent income. This makes it harder for them to reach their wealth objective and encourages them to save more to do so. The impact is greater in countries where private sector financing is raised mainly on the market (United States, United Kingdom, Netherlands, etc.), since a larger proportion of households' assets is invested in equities and equity values fluctuate more than the values of other financial investments. On the other hand, the impact is not as strong in countries that rely more on bank loans (Germany, France, Italy, etc.) The impact is also less strong for real estate assets, because, even though falling real estate prices are bad for owners, they are good for renters and first-time homebuyers. According to Banque de France estimates [3], a permanent decrease of 1 euro in the aggregate wealth of households leads to a decrease of 1 to 3 cents in annual consumption. This effect may be statistically significant, but it is economically weak, especially since analyses show that most changes in asset prices are not deemed to be permanent ones.

Secondly, falling asset prices increase the cost of capital, meaning the compensation paid to equity investors. More specifically, it means that it is more difficult to issue equities in a depressed market. Financial investors require issuers to pay higher dividends since they no longer expect to achieve capital gains with their equity portfolios. This has an impact on business investment in the productive sector.

3 *Chauvin (V.) and Damette (O.) (2009): "Wealth effects: the French case" mimeograph presented to the 2009 annual AFSE conference.*

Thirdly, falling asset prices may impede lending in two ways. On the one hand, even in "normal" times, banks have to deal with "asymmetrical" information regarding borrowers. They do not know all the details of the projects that they are financing and they do not know if the borrowers will be able to pay off the loans on time. Therefore, they require the borrower to put up real collateral, which is often made up of the borrower's personal assets. In a crisis, the value of these assets is lower, as explained above, and this makes it harder to obtain a loan. On the other hand, the uncertain economic environment in a crisis makes all projects, even the most profitable ones, riskier, which means banks are more reluctant to lend.

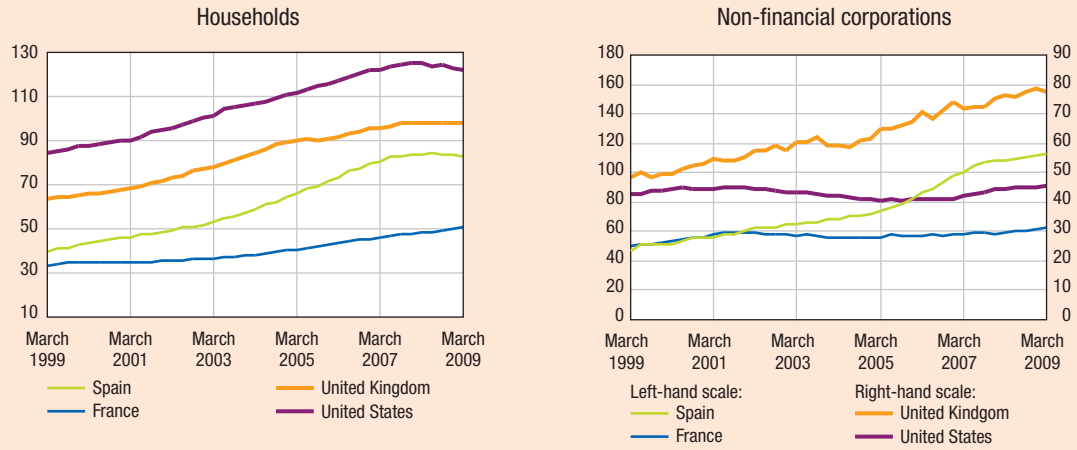
This situation is all the more likely to occur when the debt ratios of private agents reach historic highs in many countries, as is shown in the chart below. When debt rises to excessive levels, it affects both the supply of credit, since lenders are reluctant to commit further funds, and the demand for credit.

3| INCREASING DEBT OF HOUSEHOLDS AND BUSINESSES

Overindebted households and businesses are an additional transmission channel of the financial crisis to the real economy, since the problems that households and businesses encounter in obtaining new loans, or even meeting the payments on their existing loans, cause them to cut back their consumption and investment, which drives down aggregate demand and, ultimately, the general level of prices in some cases.

Debt ratio

(as a % of GDP)



Source: ECB.

A global crisis on an exceptional scale

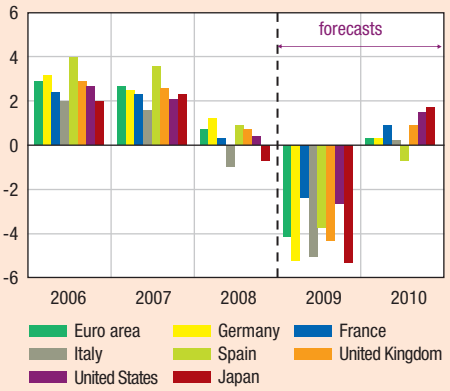
In most industrialised countries, activity started to slow down in the first quarter of 2008 and the trend became more pronounced at the start of 2009. For industrialised countries, the contraction of economic activity in 2009 is bound to be the most severe since the Second World War.

There are several distinct phases in the transmission of the financial crisis to the real economy:

- the direct effects of the real estate and financial crisis from the summer of 2007 to the summer of 2008;
- the worsening of the crisis in the autumn of 2008, with the collapse of Lehman Brothers;
- the timid recovery seen in 2009.

GDP growth rate
IMF forecasts

(% change over previous year)



Source: IMF, World Economic Outlook, October 2009.

GDP growth and projected GDP growth

(volume, as a %)

	Forecast date	Euro area	Germany	France	Italy	Spain	United States	Japan	United Kingdom	China	Russia	World
2008		0.6	1.0	0.3	-1.0	0.9	0.4	-0.7	0.7	9.0	5.6	3.0
2009												
ECB	Sep. 09	-4.4/-3.8										
EC	May 09	-4.0	-5.4	-3.0	-4.4	-3.2	-2.9	-5.3	-3.8	6.1	-3.8	-1.4
EC interim forecast	Sep. 09	-4.0	-5.1	-2.1	-5.0	-3.7			-4.3			
OECD	June 09	-4.8	-6.1	-3.0	-5.5	-4.2	-2.8	-6.8	-4.3	7.7	8.1	
OECD interim forecast	Sep. 09	-3.9	-4.8	-2.1	-5.2		-2.8	-5.6	-4.7			
IMF	Oct. 09	-4.2	-5.3	-2.4	-5.1	-3.8	-2.7	-5.4	-4.4	8.5	-7.5	-1.1
2010												
ECB	Sep. 09	-0.5 / 0.9										
EC	May 09	-0.1	0.3	-0.2	0.1	-1.0	0.9	0.1	0.1	7.8	1.5	1.9
OECD	June 09	0.0	0.2	0.2	0.4	-0.9	0.9	0.7	0.0	9.3	5.6	
IMF	Oct. 09	0.3	0.3	0.9	0.2	-0.7	1.5	1.7	0.9	9.0	1.5	3.1

1| THE SLOWDOWN IN GROWTH INITIALLY FEATURED A CONTRACTION OF PRIVATE SECTOR DEMAND

1|1 An early drop in household's property investment in some countries

Households investment in residential real estate had already collapsed in countries experiencing "property bubbles" before the crisis even started:

• in the **United States**, investment in residential real estate started to decline in 2006 and was down by a total of 56% between the fourth quarter of 2005 and the second quarter of 2009. The year-to-year increase in foreclosures stood at 32% in July 2009. Real estate prices were down by a total of 32.2% between the second quarter of 2006 and the first quarter of 2009, but they have shown some signs of recovering.

• The downturn in the **British real estate market** started in 2007 and the decline worsened with the financial crisis. Problems refinancing variable rate mortgages, which are very common in the United Kingdom, stemmed from higher rates and tighter credit standards. These problems undermined the real estate market, where nearly a third of borrowers ran the risk of not being able to refinance their mortgages. In June 2009, real estate prices were down 20.8% from their peak in August 2007.

• In **Spain**, the real estate sector was already suffering very badly before the financial crisis. In 2007, housing starts had already fallen by 50% in one year. The situation continued to worsen with the crisis. In July 2009, the decline in real estate under construction stood at 18.1% in one year. Housing prices were down by 8.3% over one year in the second quarter of 2009.

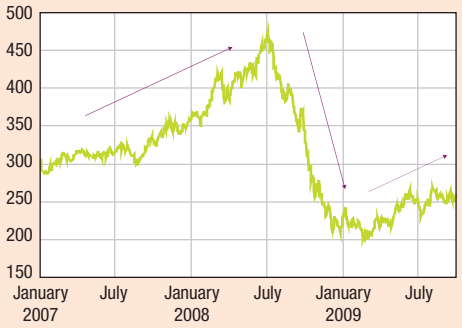
• The **Japanese property market** never recovered from the real estate crisis in 1990. Prices had been falling steadily since then and hit their lowest level in 35 years. Real estate under construction was down by 20.0% between the beginning of 2006 and July 2009.

• In **France**, the "property bubble" diagnosis is less clear-cut. In the second quarter of 2009, households' real estate investment was also down by 9.9% from its peak in the first quarter of 2008.

1|2 Household consumption was dampened by negative wealth effects and commodity price shocks, followed by rising unemployment

Private sector consumption then started to slow down in most industrialised countries, starting in the second quarter of 2007. The trend was accentuated in early 2008 in the United States in the first quarter, and then in the euro area and Japan in the second quarter. The trend was driven in part by the negative wealth effects stemming from the fall in asset prices, especially real estate prices, along with rising commodity prices (oil, metal, farm products, etc. – see chart below), which undermined households' purchasing power.

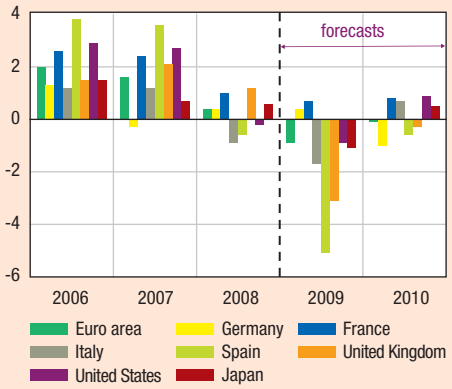
CRB Price Index (commodities)



Note: The CRB (Commodity Research Bureau) Price Index aggregates the prices of 19 commodities quoted on different markets.

Source: Bloomberg.

Growth of private consumption in real terms and IMF forecasts



Source: IMF, World Economic Outlook, October 2009.

Then, as the crisis took hold, the rise in unemployment also affected households' income. Furthermore, households tended to save more in the face of dwindling assets and gloomy economic prospects. Saving rates rose in most countries, often starting from very low levels:

- in the United States, the savings rate increased from 1.2% in the first quarter of 2008 to 5.0% in the second quarter of 2009;

- in the United Kingdom, the savings rate increased from -0.5% in the first quarter of 2008 to 5.6% in the second quarter of 2009;

- in the euro area, the propensity to save has also grown stronger, with an increase of two percentage points in the savings rate, from 13.6% in the third quarter of 2007 to 15.6% in the first quarter of 2009.

In the second quarter of 2009, private consumption had fallen by 1.8% over one year in the United States, by 1.3% in the euro area and by 1.0% in Japan. Sales of consumer durables, especially automobiles, were hit hardest, with a sharp drop in the second half of 2008. In the fourth quarter of 2008, their share in American GDP had decreased by approximately 1 percentage point compared to their level at the end of 2007. This share then remained the same during the first half of 2009.

1|3 Business investment was hurt by the poorer outlook for growth and financing difficulties

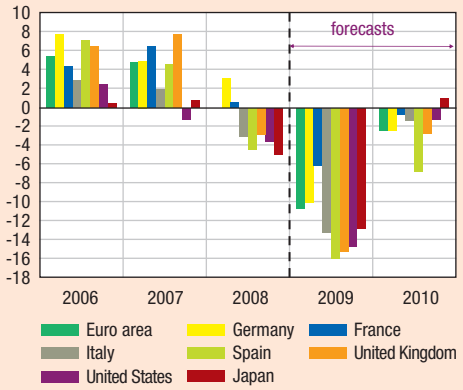
A drop in household confidence and income led businesses to expect a dip in final demand and a decline in foreign orders. At the same time, financing terms for businesses steadily worsened as

the crisis took hold. This meant that investment plans were postponed or dropped in many countries.

• In the United States, for example, the drop in private non-residential investment in real terms stood at 20% over one year in the second quarter of 2009.

• Business investment also contracted sharply in Japan and in the euro area, where NFCs' investment was down by 15.1% in nominal terms between the third quarter of 2008 and the first quarter of 2009.

Growth of gross fixed capital formation in real terms and IMF forecasts



Source: IMF, World Economic Outlook, October 2009.

2| THE CRISIS RAPIDLY SPREAD TO THE ENTIRE WORLD ECONOMY AND INTENSIFIED IN THE FOURTH QUARTER OF 2008

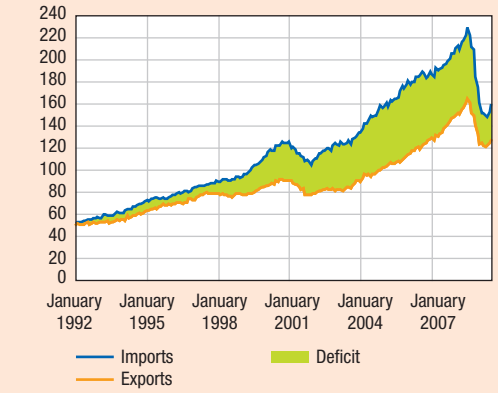
2|1 Economic interpenetration promoted the spread of the crisis

Negative wealth effects and the commodity price shock affected different economies in different ways. Yet, not one of them was spared by the economic slowdown. More specifically, there was no decoupling of the United States from the rest of the world, as had once been thought.

Consequently, the slowdown in the American economy had a direct impact on demand for other economies' output and, international trade more generally was hurt by the decline in domestic private demand in the different economies (see charts below).

United States trade balance
Trade in goods and services

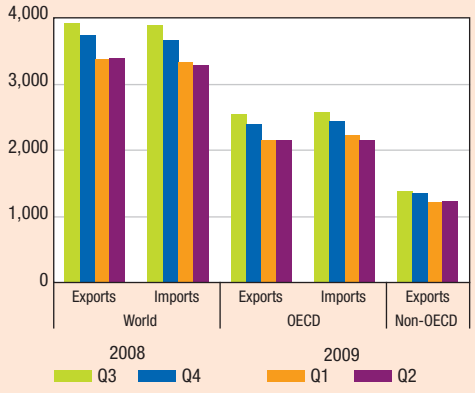
(seasonally adjusted, USD billions)



Source: Bureau of Economic Analysis (US Commerce Department).

World trade
Exports and imports of the major economic areas

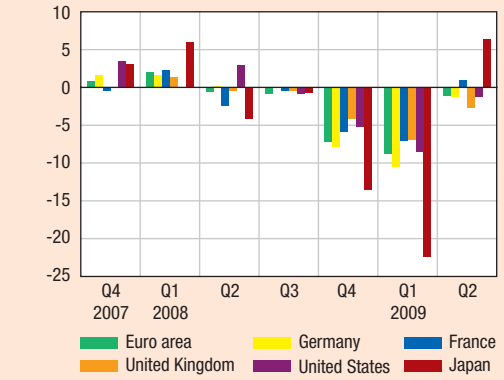
(USD billions at constant 2000 prices)



Source: OECD.

Quarterly export growth

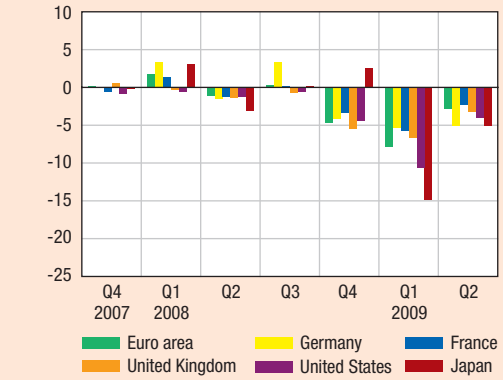
(% real growth)



Source: Eurostat.

Quarterly import growth

(% real growth)



Source: Eurostat.

• Euro area exports fell by 17.1% over a year in the second quarter of 2009, and imports dropped by 14.4%. The decline in foreign trade was particularly hard on Germany, where net exports made a negative contribution of 4.5 points to cumulative GDP growth over one year. The German economy depends heavily on foreign trade, with exports of goods and services accounting for 52% of German GDP in 2008.

• In the United States, exports were down by 15.2% and imports by 18.6% in the second quarter of 2009, compared to the second quarter of 2008, but exports accounted for only 12% of GDP in 2008.

• Japan is the country that was hit hardest by the decline in trade. In addition to the drop in foreign demand caused by the crisis, the strong appreciation of the real effective exchange rate of the yen, which started towards the end of 2008, drove down Japan's exports. The latter dropped by 29.3% and imports were down by 17.1% in the second quarter of 2009, compared to the second quarter of 2008.

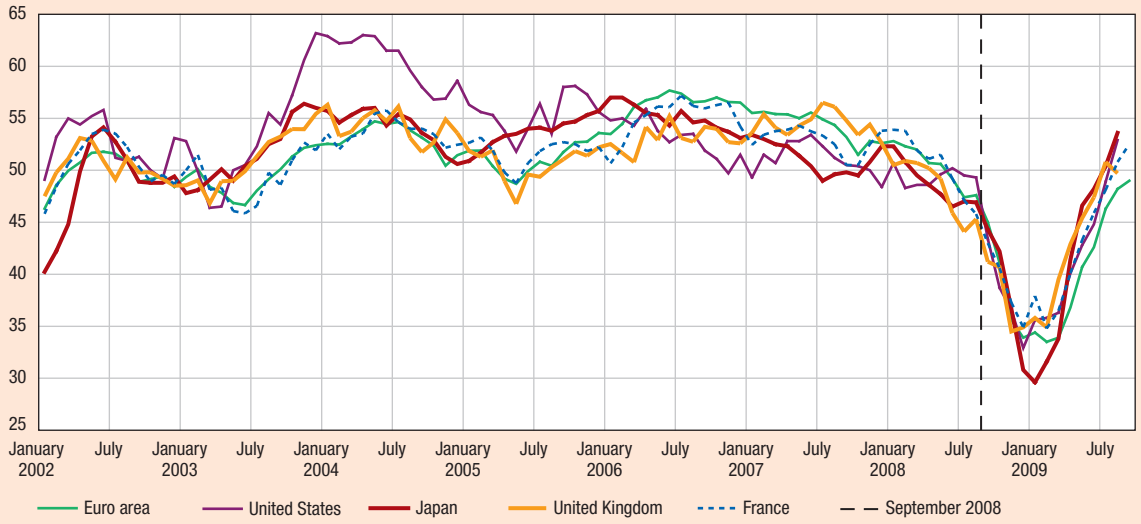
However, foreign trade was only one of the channels for transmitting economic problems from some countries to other countries. The interlinking of financial markets also played a key role. Economic interdependence stems primarily from the critical importance for the world economy of multinational corporations doing business in several places around the world and adopting global strategies.

2|2 Consumer and business confidence were undermined after the collapse of Lehman Brothers

Tighter credit standards for households and businesses and their impact on private demand were already being felt before the collapse of Lehman Brothers. They tightened even further after this event, resulting in a slight further weakening of the financial situation of companies and households (see above 1|).

The "Lehman Brothers earthquake" also acted as a catalyst for the economic slump by undermining the general confidence of economic agents. Confidence indicators, which had already worsened, plunged after September and did not bottom out until the end of the first quarter of 2009, after six months of uninterrupted fall. For both businesses and households, which had been coping with commodity price shocks, falling real estate prices in some countries, slower growth and

Purchasing Managers Indices (PMI)* in the manufacturing sector



*see glossary.
Source: NTC Research/Markit.

worsening financial conditions, the collapse of Lehman Brothers was a sign of financial market distress, indicating that the crisis was set to last and worsen in the near future.

The crisis then entered its most acute phase, with a very sudden drop in industrial output as companies struggled to adjust their inventories to the expected drop in demand in order to preserve their cash flows; in the short-term, a drop in demand can lead to growing unsold inventories, whereas in the medium term, businesses always try to adjust their inventories to expected changes in demand. This is why a cyclical inventory adjustment is always a feature of recessions.

• In the United States, the drop in industrial output over one year stood at 13.1% in July 2009. Inventory draw-downs accounted for half of the 1.9% drop in GDP seen in the first half of 2009.

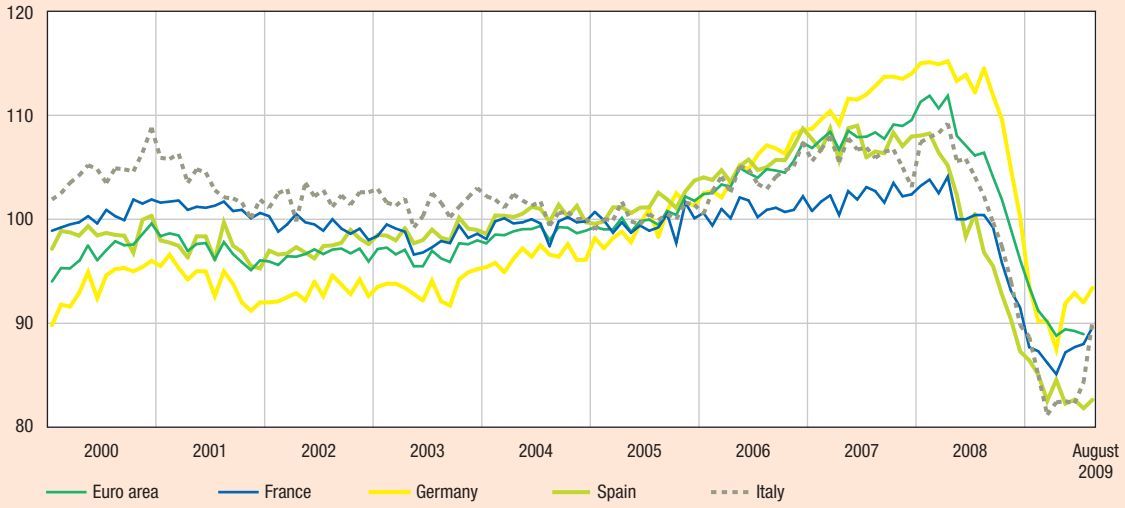
• In the euro area, industrial output dropped by 15.9% over one year in July 2009. In the first half of 2009, inventory draw-downs accounted for 1.5 point of the 2.6% decline in GDP.

• In Japan, industrial output was down by 18.7% between August 2008 and August 2009, and inventories were down by 10.4%

The suddenness of the simultaneous plunge in industrial output around the world (contraction of around 20% in the euro area), combined with a similar decline in international trade, leading to a return to the activity level of 1997, was surprising. However, it can be explained by the interlinking of production chains around the world. The example of the automotive industry is particularly striking, even without its substantial contribution to the overall contraction of growth. Carmakers drastically reduced their output to cope with a drop in demand that was especially severe in countries affected by major negative wealth effects, such as the United States, the United Kingdom, Spain and Ireland. They cut back output to draw down their inventories starting in the third quarter of 2008. Their suppliers immediately followed suit and soon the whole industry was affected.

Industrial output

(2005= 100)



Source: Eurostat; chart by Banque de France.

3| A TIMID RECOVERY IS TAKING SHAPE, BUT UNCERTAINTY PERSISTS AND THE CRISIS WILL TAKE A HEAVY TOLL

3|1 More and more signs of a recovery

An economic recovery seems to be taking shape since the beginning of the second quarter of 2009. As was the case for the decline that preceded it, the improvement seems to concern all economies.

• This improvement can be seen in nearly all of the available survey data. The manufacturing sector PMIs, for example, are up sharply in all of the countries where they are calculated and have risen above the benchmark of expansion in the United States, France, the United Kingdom and Japan. Indices for the services sector have followed suit (see chart on previous page).

• Certain countries, like France and Germany, which both posted GDP growth of 0.3% in the second quarter of 2009, are technically out of recession (see Box 3).

• However, GDP still shrank in the euro area as a whole and the United States in the second quarter, but much less than before. The contraction was 0.1% in the euro area in the second quarter, compared to a decline of 2.5% in the previous quarter, and a decrease of 0.3% was seen in the United States, compared to a fall of 1.6% in the previous quarter. Euro area household consumption posted a slight recovery in the second quarter of 2009, rising by 0.2%.

• Even though the euro area has yet to pull out of the recession technically, industrial output seems to have bottomed out. Despite a fall of 0.3% in July, the industrial output index was up by 0.2% compared to its level in April.

Box 3 France's economy during the crisis

Why France withstood the crisis better than its partners

Like the other industrialised countries, France should see the biggest drop in its GDP since the Second World War in 2009, with a fall of slightly more than 2%, according to the latest forecasts. However, France's economy is holding up better than others. The latest 2009 GDP growth forecasts show a contraction of some 5% for Germany and some 4% for the euro area as a whole, along with contractions of 2.5% to 3% for the United States and 5% to 6% for Japan. Furthermore, France, along with Germany, is one of the first industrialised countries to pull out of recession, in technical terms, with GDP growth of 0.3% in the second quarter of 2009.

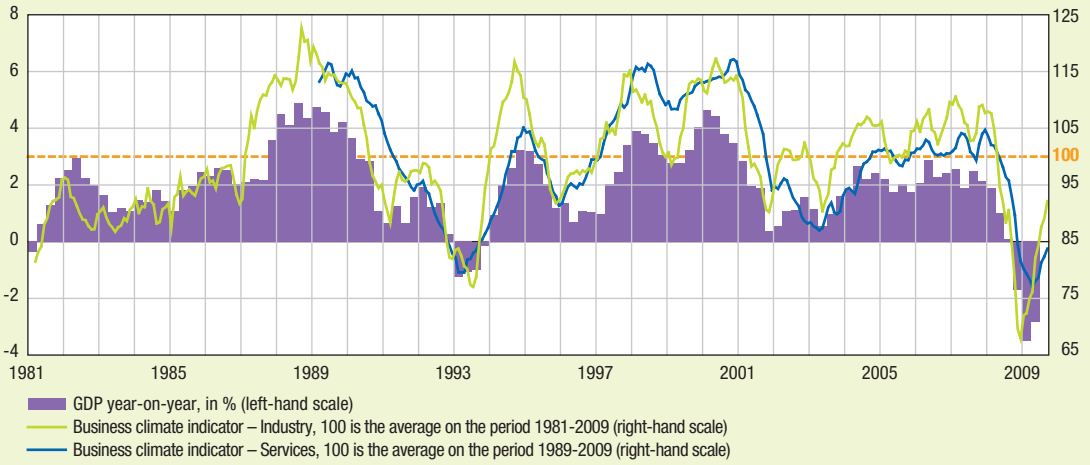
Several factors have been highlighted to explain the relative robustness of France's economy:

- ***automatic stabilisers play an important role in France, helping to keep household consumption robust. The growth of household spending did slow, but France is one of the few industrialised countries where consumption was up from its level at the beginning of 2008;***

- *there are no major financial imbalances;*

- *exposure to international trade is relatively limited compared to other industrialised countries, and to Germany, in particular.*

GDP and business climate in France



Sources: INSEE (GDP), Banque de France (Business climate indicators).

Uncertainty persists about the lasting nature of the recovery

In the second quarter, output recovered in all branches of the economy, except for the construction and agrifood industries. Output posted a 0.8% gain in industrial branches and a 0.4% gain in non-industrial branches. At the same time, the significant improvement in survey responses at the end of the second quarter points to a continuing recovery.

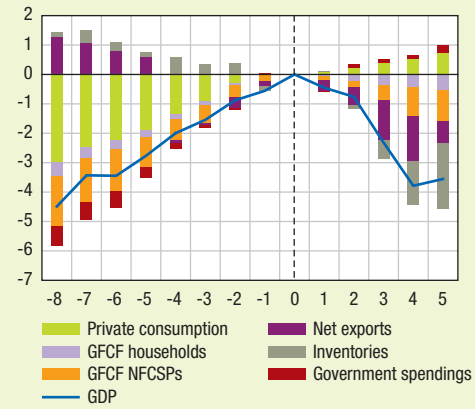
.../...

The resumption of growth should receive a boost from inventories. From the fourth quarter of 2008 to the second quarter of 2009, inventory draw-downs accounted for two-thirds of the fall in GDP, with a cumulative negative contribution of 1.7 point to the 2.5% drop in GDP. Much of this stems from the carmakers' massive inventory draw-downs in the fourth quarter of 2008, which had repercussions on the entire automotive industry. The latest surveys show that the level of inventories is now below its long-term average.

However, this should have only a temporary impact and uncertainty still persists about demand. Household consumption did remain firm in the second quarter of 2009, posting growth of 0.2%. However, consumption was primarily boosted by the car scrapping premia. In addition, unemployment is still rising and should continue to undercut households' purchasing power in the coming months.

France's GDP components in the current crisis
(2006Q3-2009Q2)
Deviation in GDP points from 2008Q1 by quarter

(real GDP, at constant 2000 prices)



Source: INSEE; calculations: Banque de France.

Households' investment also continued to contract sharply in the second quarter, with a 1.8% decrease, following a 1.9% decrease, and output in the construction sector showed a further decline of 0.5% in July. Finally, the capacity utilisation rate in industry was very low at 70.7% in August. This was just barely above the historic low of 69.6% reached in April and makes a recovery in investment less likely.

The recovery is supported by several factors:

• Public authorities have taken decisive action, with very large fiscal stimulus packages, extremely accommodative monetary policy and innovative measures to promote the stability and efficiency of the financial system. With this support, private agents regained some confidence and financing terms improved. This shows that public action stimulates both private and public sector demand (see Chapter 4 below).

• Disinflation stemming from falling commodity prices boosted households' purchasing power and their consumption.

• The most difficult adjustment phase of businesses to the crisis is gradually coming to an end. More specifically, the fall in business investment in the leading industrialised countries was much smaller in the second quarter than in the first quarter.

• In the second half of 2009, the recovery should also be boosted as businesses start rebuilding inventories (see Box 4, note 2).

• Lastly, emerging countries are contributing to renewed world growth, driven by the rebound in foreign trade.

3|2 Many uncertainties persist

The recovery is fragile and faces several direct threats:

• the effects of certain fiscal stimulus measures, such as the "car scrapping premia", which played a key role in the recovery of manufacturing, will wear off. More generally, we must keep in mind the necessarily temporary nature of exceptional government policy measures implemented since the start of the crisis;

• the boost from empty inventories is also temporary;

• the financial situation is still fragile and economic agents still have a great deal of debt (see "Transmission channels from the crisis" of this chapter);

• industries have excess production capacity, since the current level of output is very low. In the euro area, for example, the capacity utilisation rate in manufacturing was at an all-time low in July 2009, standing at 69.6%, compared to an average of 81.5% since 1990. Excess capacity dampens the outlook for a recovery in business investment. However, some catching up of the industrial output losses and a return of capacity utilisation rates that are more in line with the long-term average are expected;

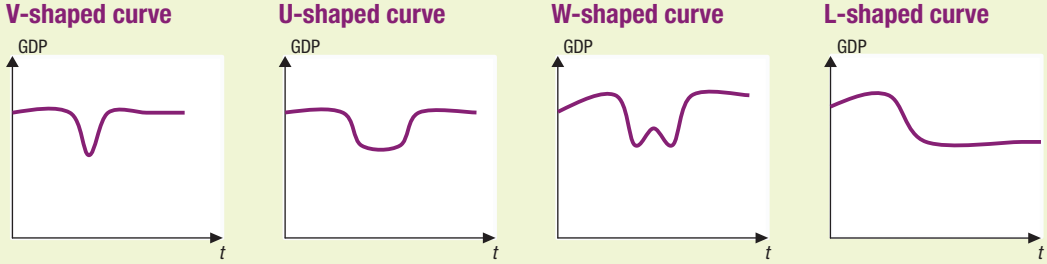
• unemployment is still rising sharply, despite the brighter outlook for activity. Employment always responds to fluctuations in output with a bit of lag;

• real estate markets are still undergoing adjustments in some regions.

Box 4 Economic recovery comes in different shapes: "V", "U", "W" and "L"

There has been a lot of discussion in the business press about V-shaped, U-shaped, W-shaped or L-shaped economic recovery. These expressions refer to the shape of short-term growth curve. Basically:

- *a V-shaped recovery refers to a short recession and a rapid resumption of growth;*
- *a U-shaped recovery refers to a longer recession, as growth takes longer to reach the levels seen prior to the start of the recession;*
- *a W-shaped recovery refers to a two-stage resumption of growth, with a first recovery, followed by a slump and ending with another, longer-lasting recovery. This type of situation is also called a double-dip recession;*
- *finally, an L-shaped curve refers to a situation with no recovery.*



These terms are merely descriptive. Most economists apply them to GDP growth series. A handful of economists also apply them to GDP level data.

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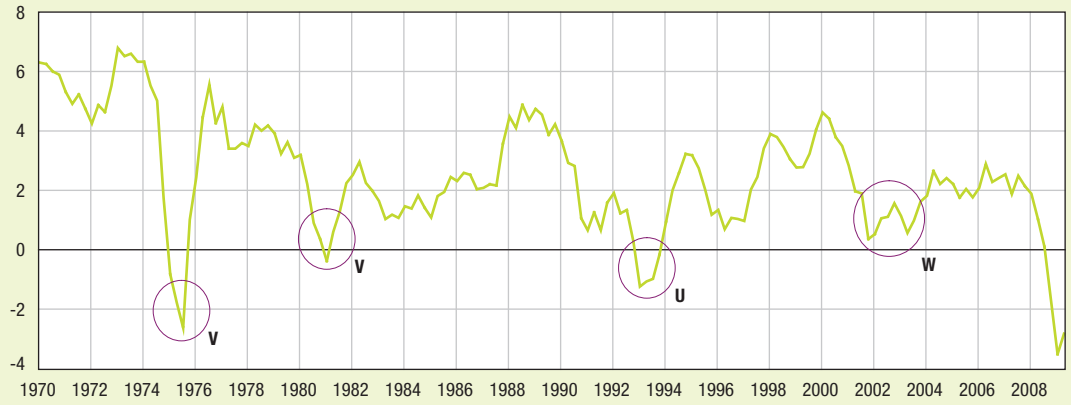
For example, the year-on-year change in French GDP shows (see chart below):

- *the recoveries after the 1974 and 1980 recessions seem to be V-shaped;*
- *the 1993 recession looked more U-shaped;*
- *the slowdown in 2002, which did not lead to an actual recession, but was very sharp nonetheless, was clearly W-shaped. The recovery started on the strength of domestic demand, but was soon stymied by a drop in net exports.*

Year-on-year change in real GDP – France

(in volume)



Source: INSEE.

A survey by the IMF[1] shows that economic recovery is slower after financial crises than after crises stemming from other types of shocks, such as oil price shocks. This seems to be borne out in the case of France, with regard to the 1974 and 1980 episodes, which were triggered by oil shocks, and the 1993 and 2002 episodes, which were triggered by financial crises. The IMF also observed that synchronised crises last longer, which provides little comfort for the current situation, which is truly a worldwide crisis. However, the survey does hold out some encouragement: monetary and fiscal policies play a very important role in ending crises and boosting economic recovery. The measures taken to cope with the current crisis have been unprecedented in scale.

The latest economic data seem to show that rapid economic policy responses have prevented the crisis from presenting a U-shaped curve or an L-shaped curve. However, the risk of a double dip (W-shaped curve) cannot be ruled out. The second dip could come once the traditional boost provided by the end of inventory draw-downs[2] tails off and if the impact of economic policies fades. Furthermore, job markets are still declining, which makes the recovery more vulnerable. Therefore, the recovery is not yet confirmed and we must remain vigilant.

In more general terms, whatever the shape of recovery, the other question that comes up is how long will it last? In other words, how many quarters or years will the economy follow the new path? This is important with regard to the long-term impact of the economic crisis, after the short-term effects have faded.

If we plot the growth rate, a resumption of growth at the former rate after a few years (see the V-shaped, U-shaped or W-shaped recoveries plotted above) is consistent with a long-term impact on GDP level, since economic growth fails to match its previous average for several years. This is the "lost years" picture (see "Scenario b – Effect on GDP level" in Box 2 on the long-term impact of the crisis). On the other hand, a strong V-shaped or U-shaped recovery that becomes self-sustaining after the first few years, with a growth rate that is higher than the previous average, would make up for the loss of growth during the crisis (see "Scenario a – Air pocket" in Box 2).

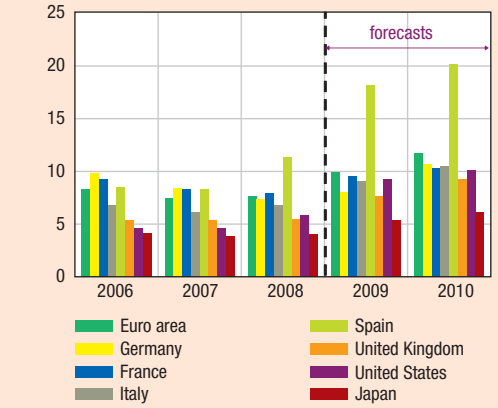
1 IMF, World Economic Outlook, April 2009, Chapter 3: "From recession to recovery: how soon and how strong?"
2 In a recession, businesses cut their output more than the drop in demand requires in order to reduce their inventories. Once these inventories are at a level that is consistent with their expectations, demand will be met by producing more and not by drawing down inventories. All else being equal, the end of inventory draw-downs makes a positive contribution to GDP growth.

3|3 A widespread increase in unemployment rates

The crisis is likely to take a fairly heavy toll in terms of jobs. At the global level, the International Labour Organisation (ILO) estimates that the crisis could cause the number of jobless in the world to increase from 180 million in 2007 to between 219 million and 241 million in 2009 [4]. The unemployment rate has already risen significantly in the leading industrialised economies. Jobs are still being shed, albeit at a slower pace than at the beginning of the year.

Unemployment rates and IMF forecasts

(as a%)



Source: IMF (World Economic Outlook, October 2009).

• In the United States, the unemployment rate climbed by 3.6 points over one year to stand at 9.4% in July 2009.

• In the euro area, the unemployment rate rose by two points in one year to reach 9.5% in July 2009. The situation varies greatly from one country to the next. Ireland and Spain saw large rises in unemployment stemming from the decline in the real estate markets, which caused housing construction to drop off and led to major job losses in the sector. The Irish unemployment rate went from 6.0% in July 2008 to 12.5% in July 2009, while Spain saw an increase from 11.4% to 18.5%. On the other hand, Germany's mechanisms to reduce working hours when output falls made it possible to attenuate the increase in unemployment, temporarily at least. The German unemployment rate stood at 7.7% in July 2009, compared to 7.2% one year earlier. In the euro area as a whole, households' uncertainty about jobs may last longer than in the United States, where the employment cycle is generally shorter.

• Japan has not been spared from the rise in unemployment, with a 1.7 point increase in its unemployment rate from 4.0% in July 2008 to 5.7% in July 2009. The sharp drop in the ratio of job vacancies to jobseekers since the beginning of 2009 suggests that the situation is bound to get worse.

4| IMPACT OF THE CRISIS ON EMERGING COUNTRIES

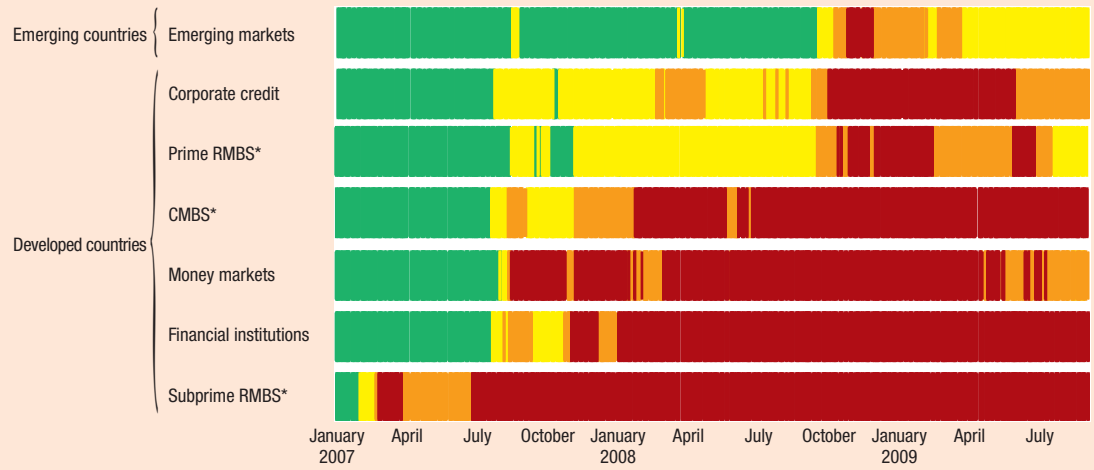
While there was not a real decoupling between developing and emerging countries, the latter started to be hit by the fallout from the financial and economic crisis with a certain lag.

According to the latest IMF forecasts [5], economic growth will slow sharply in the emerging countries in 2009, with a growth rate of 1.7%, compared to 6% in 2008, followed by a rebound to 5.1% in 2010. Compared to the forecasts released in March 2009, which projected growth of 2% in 2009 and 4.2% in 2010, the situation should be slightly worse this year, but slightly better in 2010.

The financial crisis has not affected all emerging countries in the same way or to the same extent.

4 *ILO, "Key indicators of the Labour Market", 6th edition, 2009.*
5 *World Economic Outlook, October 2009.*

Heat map of the crisis



Note: The heat map measures both the level and 1-month volatility of the spreads, prices and total returns of each asset class in terms of deviation relative to the average during an observation period between 2003 and 2006. The deviation is expressed in terms of standard deviations. Green corresponds to a standard deviation under 1. Yellow signifies 1 to 4 standard deviations. Orange signifies 4 to 7 standard deviations and red signifies more than 7 standard deviations.

* CMBS = commercial mortgage-backed security
RMBS = residential mortgage-backed security

Source: IMF staff estimates (GSFR).

- **Emerging countries in Central and Eastern Europe** were primarily affected by the repercussions of deleveraging. For years, the growing leverage of banks fuelled strong credit growth, which helped meet the huge borrowing requirements for structural investment in the region. The subsequent collapse of lending was just as great as its previous growth, but even more rapid. This had several consequences: a big increase on spreads on external debt, plunging equity markets and increasing pressure on local currencies. Furthermore, the deterioration of financial conditions led banks to write off impaired assets (primarily loans), thus eating into their capital and reducing the quality of other assets in the case of subsidiaries and parent banks. Most of the emerging countries in Europe are dependent on Western European banks, especially banks from Austria, Belgium, Germany, Italy and Sweden, which own most of the local banks. The Western banks' problems triggered the problems of the Eastern European banks, which then aggravated their parent companies' problems in a self-perpetuating cycle.

- Cross-border financing problems [6] were less pronounced in Asia and Latin America, since these regions have larger foreign exchange reserves and deeper local financing markets.

  The crisis spread to these regions primarily through the channel of international trade as trading volumes plunged in Asia, greatly reducing countries' incomes. This meant that borrowing requirements increased just when external financing sources dried up and when hedge funds, which are a major source of capital for Asian companies, were trying to sell off their now illiquid assets and banks were deleveraging.

  Asian and Latin American banks were less harshly affected than European banks however, because they had strong capital positions and obtained some of their financing on local markets.

6 *In April 2009, the IMF estimated the emerging countries' borrowing requirements at USD 1,600 billion in 2009 and USD 1,800 billion in 2012. This represents 9% of GDP in Asia, 19% of GDP for emerging European countries and 8% of GDP for Latin America.*

The public authorities of many emerging countries took support measures to limit the negative impact of deleveraging and risk aversion. Central banks provided more liquidity and some governments extended their deposit insurance schemes, even though the capacity of certain governments to provide credible coverage of deposits is sometimes limited, particularly when deposits are denominated in dollars. Some central banks improved cross-border financing by providing their banks with dollars through currency swaps.

In March 2009, the G20 committed itself to providing USD 250 billion to boost trade and export credit in emerging countries. It also increased the IMF's resources substantially and introduced a system of flexible credit lines (see "New financial stability institutions" in Chapter 6).

Government support measures could give rise to new problems. As has been the case in the developed countries, the spending involved has worsened public finances and increased the sovereign risk premium. Rating agencies have downgraded the sovereign debt of several emerging countries, making it more difficult to obtain market financing.

Business conditions vary in emerging economies in the fourth quarter of 2009. The growth posted by emerging countries in 2009 can be attributed to a few large countries, such as China and India. In a noteworthy development, China has resumed imports for final consumption, in addition to energy and assembly trade imports. Favourable signs are concentrated in Asia, whereas emerging European countries, Russia and Latin America are still in recession. At this point, the favourable signs must not be overestimated, since they are largely due to temporary factors, such as stimulus plans and rising commodity prices.

Box 5 The spread of the crisis to emerging economies and the different lessons to be learned from it

The crisis caught up with the emerging and developing countries starting in September 2008 and, more specifically, after the collapse of Lehman Brothers. In view of their lack of direct exposure to the subprime market, it was hoped for a time that these economies were decoupled from those of the advanced countries. But the financial turmoil was transmitted to them through other channels that gradually came to light.

The emerging and developing countries were affected by a triple exogenous shock, as international liquidity dried up, worldwide demand collapsed and commodity prices plunged.

• *Ten years after the Asian crisis, emerging economies were gradually opening up again to foreign capital, primarily through the big increase in foreign banks' cross-border claims on these economies. In 2008, the flow of capital to emerging and developing countries contracted sharply, with a decline of more than USD 500 billion, as banks withdrew from these economies, which nevertheless still received a net inflow of capital. The situation worsened in 2009 and even FDI was affected. The drop in the flow of capital to emerging countries was sudden. After net private capital inflows of nearly USD 700 billion in 2007, net outflows could exceed USD 50 billion in 2009 according to the forecasts in the* October 2009 World Economic Outlook.

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• *Conversely, it should be noted that Brazil is a specific case in that, to limit the appreciation of the real, a 2% tax was implemented on capital inflows invested in fixed income products or equities.*

• *After affecting the capital accounts and financial accounts in the emerging countries' balances of payments, the crisis spread to their trade balances and the current account balances. All geographical areas were affected, albeit to different degrees. Emerging countries' exports posted less than 5% growth in 2008 and then contracted by 7.2% in 2009. Emerging Asian and European countries, where exports account for more than 50% of GDP on average, were hit the hardest by the worldwide demand shock. Latin American countries seem to be a bit more protected, even though the exports of certain countries, such as Mexico and Venezuela, are very vulnerable to any dip in demand from the advanced countries.*

• *Another factor making emerging countries vulnerable was the extreme volatility of commodity prices seen during the crisis. For exporting countries, this volatility changed the terms of trade and created uncertainty about expected tax revenues. For example, the drop in oil prices from USD 133.60 to USD 41.30 per barrel between July and December 2008, along with falls in the prices of other commodities in the third quarter of 2008, had a substantial impact on Venezuela, Mexico and countries of the Persian Gulf. Other countries, including Argentina and South Africa, were more vulnerable to swings in agricultural and mineral prices. As commodity prices start to rise again, the outlook for the exporting countries' current account balance has improved slightly. On the other hand, the initial fall in prices cushioned emerging countries that import commodities from the full effects of the crisis and these countries will probably struggle as prices start to rise again.*

• *Other external flows of funds, such as workers' remittances and direct investment, should also contract. The current crisis has also led to a sharp reduction in fiscal revenues and a substantial increase in borrowing requirements.*

The first lessons to be learned from the transmission of the crisis to emerging economies

• ***A striking feature of the current crisis is that it affects all countries, including those that had accumulated large foreign exchange reserves.*** *After their experience with previous crises and, more specifically, with the Asian crisis in the late nineteen-nineties, many countries built up large foreign exchange reserves. These reserves were seen as insurance against any type of reversal in international capital flows and, to a certain extent, as a guarantee of independence from the IMF. And yet, the current crisis has affected countries with massive foreign exchange reserves, such as Russia or South Korea.*

• ***The liquidity crisis has highlighted the need to reform our collective framework for managing crises*** *and, more specifically, the need to organise the supply of liquidity in the absence of an international lender of last resort. Governments had to take urgent action in response to the drying up of private international liquidity. A growing number of bilateral, regional and multilateral initiatives were taken, such as swap agreements granted by the Fed and the Eurosystem, which are the leading issuers of international currencies. Then, the G20 agreed to an unprecedented increase in the resources of International Financial Institutions, including a tripling of the IMF's resources. The instruments for prevention and intervention were also reformed, with the introduction of the new IMF flexible credit line facility, for example.*

• ***However, prior efforts to achieve sound macroeconomic conditions helped countries cope with the worldwide crisis.*** *Even though all emerging countries have been affected by the crisis, they have not coped with it in the same way and not all of them have the same margin for fiscal and monetary manoeuvre. Even though many countries had made substantial improvements after the 1997 crisis, these countries' traditional weak points still remain and explain much of their current difficulties withstanding the crisis. The initial weak points include the level and structure of their government and external debt, along with their current account and fiscal deficits. The countries that are least prone to these financial and structural weaknesses are the ones that seem to be withstanding the crisis best.*

PART 2

PUBLIC CRISIS MANAGEMENT

What happened to liquidity?
A central banker's point of view

*Extract from a speech by **Jean-Paul Redouin**, Deputy Governor of the Banque de France to the Euro Debt Market Association on 10 April 2008*

WHAT HAPPENED TO ASSETS?

*"One of the main triggers of the crisis was the sharp and sudden decrease in the **value of collateral**. By contagion, an aggravating factor has appeared: bad assets have driven huge categories of assets out of circulation, even high-quality assets. That is why, over the last few months, we have observed illiquidity spreading from one market to another and from one country to another.*

Three basic comments illustrate that:

- *First, the proliferation of off-balance sheet structures involved in **maturity transformation** was another factor of market disruption. Those structures with no capital buffer were unable to hold long-term illiquid assets when investors decided not to roll over their short-term funding, which set off a wave of forced selling and drove down prices.*

- *Second observation: the liquidity provision channels based on securitised and structured assets are, by their very nature, fragile: they rely on innovative instruments that lack deep, "battle-tested" secondary markets. Their opacity and complex nature have been strong impediments to the emergence of an efficient secondary market and to the existence of observable market prices.*

- *Thirdly, by relying on highly leveraged financial instruments, originators have increased the probability of market illiquidity and, at the same time, have given investors a misleading impression of abundant liquidity.*

WHAT HAPPENED TO THE MONEY MARKET?

*The money market faced a real dislocation. This can be viewed from different standpoints. First, a dislocation in **maturities**, with abundant liquidity for the shortest maturities (less than one week). It is also possible to find liquidity for maturities exceeding one or two years. But liquidity is drying up for the intermediate maturities (1 month, 3 months, 6 months), with the only entity providing medium-term liquidity being the central bank.*

[…]

Dislocation also appeared between players: some are lending only over the very short term, while others are concentrated on longer periods. This led to specialisation of market participants by maturities. In addition, non-financial companies have been able to raise funds more easily and even obtain long-term funding at lower cost than their banks in some cases, creating a rather paradoxical situation.

Lastly, the dislocation is also a ***geographical*** *one: the circulation of liquidity across borders between euro area banks came to a halt. For instance, German banks, which used to lend substantial amounts to French banks, are now hoarding liquidity and French banks have to rely more on the central bank for their short-term liquidity needs. In a certain sense, borders have reappeared in the euro area money market and disrupted the yield curve.*

THE ROLE OF BANKS AS LIQUIDITY PROVIDERS AND MANAGERS

In a conventional financial intermediation framework, banks provide liquidity to the whole economy through intermediation by creating a maturity mismatch between their balance sheet assets and liabilities. This maturity transformation activity is possible because banks are assumed to be better at pooling, selecting and monitoring loans and borrowers and are also better at portfolio diversification than their depositors; they are therefore able to reduce the asymmetry of information on credit markets.

In so doing, bank intermediation eases the credit constraints affecting non-financial agents.

Over the past few decades, the financial system has developed a more efficient approach to liquidity management. Financial innovation enabled banks to move from an "originate to hold" model to an "originate to distribute" model, and rely more on financial markets for their funding. This eased credit constraints in the economy even further, since lending growth could be partially disconnected from the growth of bank deposits. But financial institutions were probably overconfident in their increasingly sophisticated asset-liability management techniques. It was more difficult than anticipated for financial institutions to adjust their ALM quickly in times of stress. This means that there is probably a limit to the optimisation of asset-liability management, which is a lesson for the future.

The recent trend towards re-intermediation shows that banks are and will likely remain major liquidity providers for the whole economy.

They are able to do so because they have direct access to central bank money. This access is available only to banks, because they comply with specific requirements, unlike mutual funds and non-regulated entities such as hedge funds. Banks satisfy minimum requirements regarding capital, liquidity and disclosure of their exposure and positions. These regulatory constraints are counterweights to their maturity transformation capability and their ALM optimisation policy. Recent actions by the US Federal reserve show that extended access to central bank money is possible only in exchange for more extensive supervision to ensure the integrity of the financial system."

Monetary policy developments

1| ADAPTING THE OPERATIONAL FRAMEWORK

"Monetary policy-making is about setting the policy rate at a level consistent with the central bank's macroeconomic objectives […], while liquidity management is about ensuring that the money market functions "normally", so that monetary policy impulses can be transmitted effectively to the rest of the economy."[1]

Box 6 Setting key interest rates and interest rate formation

Central banks primarily have one instrument to achieve their objectives, the primary aim being price stability. This instrument is setting the key rate, which is usually the interest rate for very short-term refinancing that the central bank provides to commercial banks for maturities of one day up to a few days. A change in this rate is the first link in a long chain of causes and effects that connects monetary policy decisions to the general level of prices.

Key rates

As the crisis unfolded, we saw remarkable convergence in the operating frameworks of the leading industrialised countries' central banks. Most of them, except Japan, are now using an interest rate corridor to keep overnight interest rates within a range around the refinancing rate bounded by the central banks' standing facilities. The Eurosystem has used since its creation, two such facilities. The marginal loan facility, which determines the upper bound for the overnight rate. This is the interest rate that banks pay for borrowing liquidity from the ECB at the end of the day. The deposit facility determines the lower bound of the overnight rate. It is the rate that banks earn on their deposits with the central bank. The standing facility rates and the minimum rate for the ECB's main refinancing operations make up the Eurosystem's key rates.

Monetary policy transmission channels

Key rate levels and changes influence the economy primarily through two transmission channels: the interest rate channel and the bank lending channel.

The interest rate channel
Financial markets feature a large number of interest rates. Each of these rates corresponds to a given maturity and category of borrowers. They can be plotted on a "yield curve", which defines the structure of interest rates that a given category of borrowers will pay for loans of different maturities (three months, six months,

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1 *Extract from a speech by Christian Noyer, Governor of the Banque de France to the European Banking and Financial Forum on 1 April 2008* www.banque-france.fr/gb/instit/telechar/discours/2008/disc20080401.pdf

one year, two years, ten years, up to thirty or forty years). The yield curve usually slopes upwards, with higher rates at the long end. Changes in key rates are disseminated to the economy through the level and slope of the yield curve. This means that the shape of the yield curve is critical for monetary policy transmission. This shape depends mainly on three factors:

- *expectations of future changes in short-term rates. If markets expect short-term rates to go up in the future, the long-term rates will show a proportionate rise. For example, the ten-year rate is equal to the combination of the ten one-year rates expected in each of the next ten years;*

- *uncertainty affecting rate expectations, which is materialised by a specific risk premium. The greater the uncertainty surrounding short-term rate expectations, the higher long-term rates are. This is one of the reasons why central banks strive to maintain their credibility, since well-anchored expectations mean lower risk premiums;*

- *long-term rates are affected by the supply and demand for securities at different maturities. For example, if insurance companies' demand for ten-year Treasury bonds increases, the bonds' prices will rise and their rate will decline. On the other hand, if the fiscal deficit deepens, the Treasury will have to issue more securities and the increase in supply will make prices go down and drive up the interest rate that the government must pay on its bonds. The central bank sets its key rates so as to affect all of the interest rates influencing the national economy. All else being equal, a change in the key rate triggers a shift in the yield curve, at least at the short end. If the central bank has strong credibility, its messages can also influence inflation expectations and thus affect the slope of the yield curve. Ultimately, the economy responds to the level and changes in real interest rates, meaning the net difference between nominal market rates and expected inflation. The central bank's influence over inflation expectations, and thus over real rates, depends on how credible it is.*

The bank lending channel

Not all economic agents, meaning households and corporates, have direct access to financial markets. Many of them rely on bank loans. This means that the bank lending channel is important for monetary policy transmission. It is a complementary channel to the interest rate channel. Interest rates determine the cost of the short-term funds that banks obtain on money markets and the long-term funds that they obtain on financial markets. The more they pay for their funds, the less incentive banks have to lend and the higher their lending rates are. This causes a decline in the demand for credit. Therefore, monetary policy has an impact both on lending terms and lending volumes. Changes in bank lending terms and volumes have an impact on investment and consumption.

Central banks, and the European Central Bank in particular, took several measures to support short-term liquidity, such as extending maturities for their refinancing facilities, providing foreign currency funding, broadening the range of eligible counterparties and eligible collateral and changing auction procedures to make unlimited amounts of liquidity available. *Exceptional monetary easing* also led to *exceptionally low key interest rates*.

Measures to support liquidity

Dates	European Central Bank	Bank of England	US Federal Reserve	Bank of Japan
December 2007 January 2008	Provision of USD 10 billion via a 28-day repo transaction.	Auctions of dollars.	Twice weekly auctions, very large range of eligible collateral.	
March	New facility to provide liquidity in dollars (USD 15 billion): Term Auction Facility (TAF). (see 2|2)		New Term Securities Lending Facility (TSLF) enables primary dealers to exchange collateral for Treasury securities. New Primary Dealer Credit Facility (PDCF), a standing credit facility for primary dealers.	
April		Special liquidity scheme: swaps lower quality securities for gilts.		
May	28-day TAF amount increases from USD 15 billion to USD 25 billion.			
July	Introduction of an 84-day TAF of USD 10 billion.		Introduction of an 84-day TAF.	
September	Introduction of an overnight TAF of USD 40 billion. The amount of 28-day and 84-day TAFs reaches USD 110 billion.	Introduction of an overnight TAF of USD 40 billion.		
	Concerted action: Introduction of a 1-week TAF.			
	Fed swap lines increase from USD 120 billion to USD 240 billion.	Fed swap lines increase from USD 40 billion to USD 80 billion.	Broadening the range of eligible collateral for the PDCF and the TSLF and the amount of the TSLF reaches USD 200 billion.	
October	Concerted action: switch to a fixed-rate TAF with pre-announced full allotment for 7-day, 28-day and 84-day TAFs. The dollar amount available from the Fed becomes unlimited. Introduction of a weekly 7-day TAF.			
		Creation of a discount window facility that lets banks exchange a large variety of collateral for gilts or even cash.	Fed swap lines of USD 30 billion each for Mexico, Brazil, Singapore and South Korea.	
December				Announcement of a massive programme to purchase JPY 3,000 billion in yen-denominated commercial paper.
				Refinancing facility that lets banks put up unlimited amounts of corporate bonds as collateral.
January 2009	Collateral rules change with regard to ABS. As of 1st March, they must be rated AAA at the time of issue and at least A during their lifetime.			

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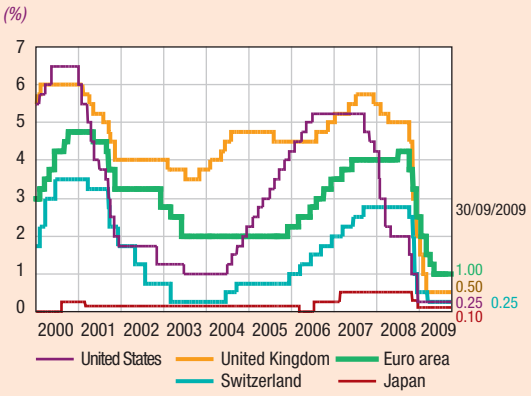
Dates	European Central Bank	Bank of England	US Federal Reserve	Bank of Japan
February				Announcement of a detailed programme to purchase (JPY 1,000 billion) corporate bonds with a residual maturity of up to one year (at least A-rated).
March				Announcement of a plan to provide up to JPY 1 trillion in subordinated loans to banks to reinforce their tier-two capital.
April			Fed FX swap lines set up with the ECB, Bank of England, Bank of Japan and Swiss National Bank until 30 October 2009.	Eligible collateral broadens to include State loans to municipalities and government guaranteed loans.
May	Maximum maturity of liquidity provision operations for banks extended from 6 months to 1 year.			
June	Currency swap agreements between the Fed and the ECB extended until February 2010.			
July			Amounts allotted through TAFs reduced from USD 125 billion to USD 100 billion.	
October				Announcement that the commercial paper and corporate bond purchase programme is to end in December 2009.

Key interest rate cuts

Dates	European Central Bank	Bank of England	US Federal Reserve	Bank of Japan
October 2008	Concerted action*: key rates cut by 50 bp.			Key rate cut by 20 bp to 0.20%.
November	Rates cut by 50 bp to 3.25%.	Rates cut by 150 bp to 3%.		
December	Rates cut by 75 bp to 2.50%.	Rates cut by 100 bp to 2%.	Fed Funds target rate cut by 1% to a range between 0% and 0.25%.	Key rate cut by 10 bp to 0.10%.
January 2009	Rates cut by 50 bp to 2%.	Rates cut by 50 bp to 1.50%.		
February		Rates cut by 50 bp to 1%.		
March	Rates cut by 50 bp to 1.5%.	Rates cut by 50 bp to 0.5%		
April	Rates cut by 25 bp to 1.25%.			
May	Key rate cut by 25 bp to 1%.			

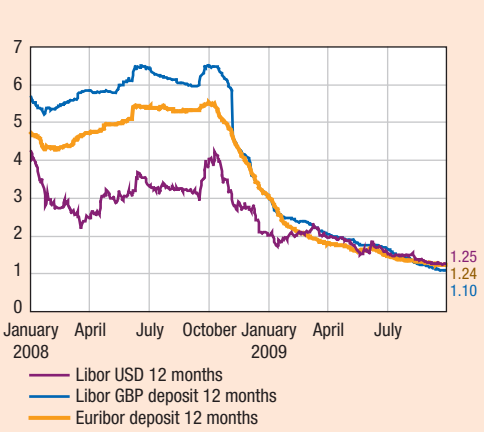
Note : bp = basis points.
**: Also with Central Banks of Canada, Sweden and Switzerland.*

Central Bank Rates



Source: Bloomberg.

12-month interbank rates



Source: Bloomberg.

But the severity of the crisis meant that the conventional transmission channels for monetary policy did not work properly (see Box 6). This situation could grow even more disturbing if expectations of falling prices lead to deflation, which means a widespread and lasting decline in price levels. To prevent this, central banks had to change their operating procedures and introduce innovative "non-conventional" measures.

2| NON-CONVENTIONAL MEASURES

Non-conventional measures are intended to re-establish the normal operation of transmission channels for monetary policy by using other means than key interest rates. Each of the leading central banks implemented such measures in turn, starting with the US Federal Reserve in December 2008, the Bank of England in January 2009 and the European Central Bank in June 2009.

2|1 The objectives and methods of non-conventional measures

There are three main categories of non-conventional measures and they can be used in combination. The measures are aimed at:

• achieving a massive increase in the quantity of money circulating in the economy. This is called "quantitative easing";

• affecting the slope of the yield curve by committing to the future path of key rates in order to guide agents' expectations;

• unfreezing credit markets through outright purchases of debt securities in order to exert downward pressure on risk premia. This is called "credit easing".

The recourse to central bank as a tool to regulate liquidity, is aimed at overcoming the obstacle of blocked interest rates. The central bank attempts to "saturate" economic agents' demand for money in the hope that they will spend their excess holdings directly. This is why the money is very often channelled to the only agent that is sure to spend it, meaning the government, which will spend it through its fiscal deficit. Central banks' purchases of government debt securities represent one of the most commonly used forms of quantitative easing.

Central banks can also act on the yield curve by influencing expectations. The central bank can influence the yield curve by making an explicit commitment to keep its key rates very low, or even at zero, for a considerable period of time. It may also define prerequisites for a future rate hike, such as guaranteeing that the rates will not be increased unless inflation reaches a certain level. This strategy is more effective if the central bank has a quantified definition of price stability as part of its general monetary policy framework, which can then be used as an explicit benchmark. The central bank can also support such a policy by extending the maturity of the financing provided at the key rate beyond the usual few days.

Ultimately, if the credit channel is blocked, the central bank can take the place of commercial banks and markets to make loans directly to the economy. In practical terms, the central bank starts by broadening the range of loans that it refinances.[2] It can then make outright purchases of securities representing lending to the economy, such as commercial paper, corporate bonds and mortgage bonds. These operations have two effects: they stimulate the market for debt securities and they provide financing directly to the economy. In exchange, however, the central bank is exposed to credit risk and interest rate risk, which are not ordinarily part of its function.

To recap, we can present non-conventional measures in the following table:

Objective \ Measure	Purchases of govt. securities	Purchases of corporate securities	Commitment to hold rates
Increasing the quantity of money in the economy	Yes	Yes, if no sterilisation	No
Affecting inflation expectations and the yield curve	Yes	Yes through risk premia	Yes
Unfreezing credit markets	No	Yes	No

2|2 Recap of the leading central banks' measures to purchase and refinance assets

In practice, the central banks implemented two types of non-conventional measures: refinancing operations and direct purchases of securities. In this way, the monetary authorities were responding to the seizing-up of the usual financing mechanisms — whether intermediated or otherwise — by taking over from banks and the markets.

2 *Banks must provide collateral for their refinancing with the central bank. This collateral is usually government securities or loans to very highly rated borrowers. By relaxing its requirements, the central bank encourages banks to extend the loans that have just become eligible as collateral.*

There are noteworthy differences between the non-conventional measures of the Eurosystem and the Fed. Given the importance of intermediated financing (use of market financing by non-financial agents in the euro area is relatively limited), the Eurosystem acted primarily by meeting the refinancing needs of banks.

In the absence of an initial operational framework as flexible and broad as that of the Eurosystem (particularly regarding the range of collateral eligible for monetary policy operations) and owing to the very extensive use made by non-financial agents — in normal periods — of market financing, the Fed had to extend the scope of its intervention beyond bank refinancing (i) by putting in place financing facilities for very diverse assets (ABS and commercial paper) for the benefit of different types of player and (ii) by making direct purchases of securities. These different measures were all introduced in order to improve financing conditions in the economy (acting both by reducing yields on benchmark assets and by providing additional liquidity to the economic system).

The United States implemented large-scale non-conventional measures, under which the Federal Reserve purchased such assets ranging notably from Treasury bonds (thus rebuilding its traditional stock of these securities held for monetary policy purposes) to very long-term MBS (see tables below).

The Eurosystem instituted a covered bond purchase programme. The Bank of England introduced an asset purchase facility. The budgeted envelope for the facility was increased to GBP 200 billion and the minimum maturity for eligible assets was 5 years (then lowered to 3 years in August 2009).

Excerpt from the speech by Christian Noyer, Governor of the Banque de France to the General Meeting of the Banking and Finance Coordination Board, Paris, 23 June 2009

"The Eurosystem central banks used all of the options available under their operating framework to intervene and inject massive amounts of liquidity into the banking system. Massive operations were carried out rapidly in response to market developments. Short-term refinancing risk has been reduced substantially in the euro area because the Eurosystem now meets credit institutions' requests for liquidity with fixed rates and unlimited amounts. In addition to these actions, central banks have developed new facilities to restore markets to normal operations. I will mention just two of the most recent actions announced by the Governing Council. The first was the introduction of one-year refinancing operations, which completes the range of refinancing solutions available to credit institutions. The second was ***the announcement of a EUR 60 billion covered bond purchase programme.*** *Issuance of these covered bonds is a major refinancing source for banks, especially in the real estate sector."*

Outright asset purchases in the United States, the United Kingdom and the euro area

	CP and ABCP: via SPVs	Corporate bonds	Long-term Treasury bonds	Debt securities from Government sponsored enterprises (GSEs)	Government sponsored enterprises' MBS	Covered bonds
USA (Fed) *(USD billions)*						
Market size end 2008	1,650		6,338	3,224		
Ceiling	1,800 CPFF [1]		300 [2]	175 [3]	1,250	
Purchases (9 Nov. 09)	351 (Jan. 2009)		300	147	775	
UK (BoE) *(GBP billions)*						
Market size end 2008	43 (CP)	300	473 (*gilts*)			
Ceiling	←	200 [4]	→			
Purchases (9 Nov. 09)	2.3 (May 2009)	1.4	173			
Eurosystem *(EUR billions)*						
Market size end 2008						1,500
Ceiling						60
Purchases (9 Nov. 09)						21.6

(1) Under the Commercial Paper Funding Facility (CPFF), the Federal Reserve Bank finances outright purchases of CP and ABCP from eligible issuers through an SPV. This facility was extended until 1 February 2010. The Fed did not announce an official ceiling on purchases, but suggested a ceiling of USD 1,800 billion in its "Report Pursuant to Section 129 of the Emergency Economic Stabilization Act of 2008: Commercial Paper Funding Facility".
(2) The Treasury purchase programme in the USA ended in October 2009.
(3) The initial maximum allocation for purchases of GSE securities was USD 200 billion and it was reduced to USD 175 billion in November.
(4) The initial amount for the United Kingdom's Asset Purchase Facility was GBP 75 billion; it was then progressively increased to GBP 200 billion.

Assets financing measures in the United States

(USD billions)

Assets concerned	ABCP (AMLF) [1]	CP and CDs (MMIFF) [2]	ABS (student loans, credit card claims), CMBS …(TALF) [3]
Ceiling	No officially announced ceiling	540	1,000
Refinancing amount (9 Nov. 09)	79 (early Oct.2009)	0 (never used)	43

(1) The Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF) provides funding that allows banks to purchase ABCP from money market mutual funds to prevent defaults on investors'redemptions.
(2) Under the Money Market Investor Funding Facility (MMIFF), the Federal Reserve Bank provides secured funding to SPVs to support a private sector initiative to finance the purchase of commercial paper and certificates of deposits issued by financial institutions in the event of a run (ended on 31 October 2009).
(3) The term Asset- Backed Securities Loan Facility (TALF) makes it possible to grant 3-to-5-year loans to investors to fund newly issued ABS/CMBS portfolios.

Non-conventional measures implemented by the Federal Reserve

	Description	Implementation date	Situation at end November 2009
	Provision of short-term liquidity		
Term auction facility (TAF)	Collateralised 1-to-3-month Fed loans for banks.	December 2007	Reduction of maturity and maximum amount allotted.
Term securities lending facilities (TSLF)	1-month Fed loans of securities for primary dealers.	March 2008	Fewer and smaller operations.
Primary dealer credit facility (PDCF)	Overnight loans for primary dealers.	March 2008	Extended until 1 February 2010.
	Measures to support mutual funds		
Asset backed commercial paper money market mutual fund liquidity Facility (AMLF)	Lending to money market mutual funds to purchase ABCP.	September 2008	Extended until 1 February 2010.
Money market investor funding facility (MMIFF)	Fed financing for special purpose vehicles (SPV) for purchasing CDs and CP held by money market mutual funds.	October 2008	Facility expired.
	Measures to support corporate finance		
Commercial paper funding facility (CPFF)	Financing for SPV that have to purchase CP with maturities under 3 months from eligible issuers.	October 2008	Extended until 1 February 2010, but facility now little used.
	Measures to support lending to individuals and small businesses		
Term asset backed securities loan facility (TALF)	Collateralised Fed loans to private sector agents to finance purchases of newly issued ABS collateralised by car loans, student loans and credit card claims. The Fed then sells the collateral to a vehicle.	November 2008	The facility making TALF loans collateralised by newly issued CMBS will cease on June 30, 2010, and TALF loans collateralised by other TALF-eligible newly issued and legacy ABS on March 31, 2010, unless the Board of Governors extends the facility.
	Long-term security purchases		
Purchases of mortgage backed securities (MBS)	Purchases of MBS guaranteed by Government sponsored enterprises (GSEs), Fannie Mae and Freddie Mac.	November 2008	Programme scheduled by the Fed to expire at end-March 2010.
Purchases of GSE securities	Purchases of GSE bonds.	November 2008	Programme scheduled by the Fed to expire at end-March 2010.
Purchases of Treasuries	Purchases of US Treasury notes.	March 2009	Programme completed end-October 2009.

Note: Back in December 2007, the Fed first implemented a set of facilities for injecting liquidity with maturities up to 3 months by making collateralised loans to banks (TAF, PDCF) or lending Treasury securities against less liquid collateral such as ABS and MBS, etc. (TSLF). Then, in late 2008 and early 2009, the Fed introduced several securities purchase programmes. These were supplemented by measures to support money market mutual funds (AMLF, MMIFF).

Box 7 Non-conventional measures: the example of the Eurosystem's covered bonds purchase programme

The covered bond market

Covered bonds are basic securitisation instruments that are comparable to conventional bonds. The difference lies in the protection against insolvency of the issuer. Covered bonds are backed by a pool of assets that can be used to compensate the holders. They are often backed by mortgage loans, especially in the United States, or by government or public sector debts (municipal bonds). These characteristics make these instruments popular with investors. The value of outstanding covered bonds reached nearly EUR 1,900 billion in 2007 and more than EUR 2,000 billion in 2008.

The crisis took a heavy toll on the sector, especially through Hypo Real Estate in Germany, which was nationalised. Activity in this sector was sustained in 2008, but the first half of 2009 was difficult.

The Eurosystem introduced a EUR 60 billion covered bond purchase programme in July 2009

The eligible counterparties for the programme are the same as for the Eurosystem's refinancing operations. The programme started in July and will end by July 2010 at the latest.

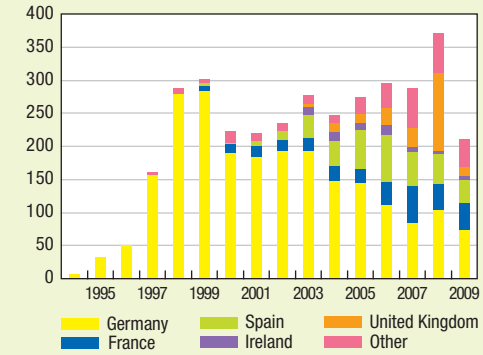
The purchases are made on both the primary market and on the secondary market. Securities need to meet eligibility criteria to be used as collateral for refinancing operations. They must be rated AA or higher (except in special cases) or have an equivalent rating from at least one of the three leading rating agencies (Fitch ratings, Moody's, Standard & Poor's). They must not be rated lower that BBB-/Baa3 under any circumstances.

The programme had a positive impact on volumes and risk premiums. Volumes exceeded EUR 25 billion in May, when the programme was announced, and peaked at EUR 34.6 billion in September. A fairly clear trend towards lower issuer spreads is emerging. After peaking in France and Spain in March 2009, spreads have since narrowed significantly.

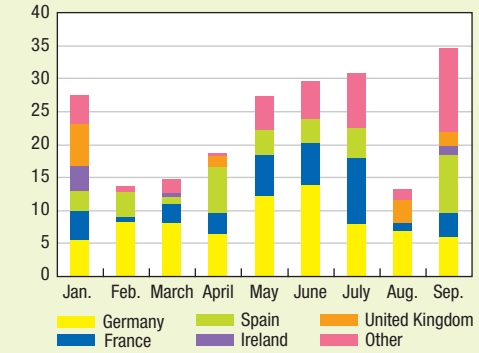
Issuance volumes by country

(EUR billions)

ANNUAL DATA



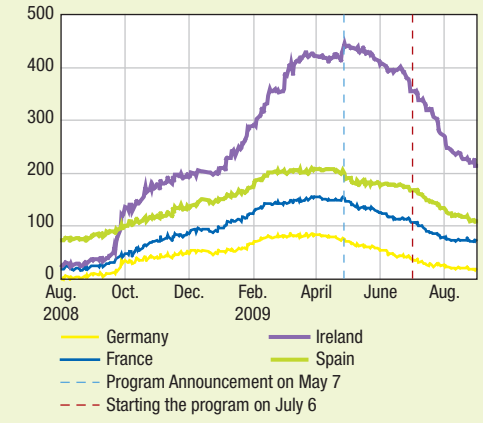
MONTHLY DATA (2009)



Source: Dealogic.

Spreads at issue by country in swap spreads

(basis points)



Sources: Bloomberg, iBoxx.

3| Cooperation between central banks: provision of liquidity in foreign currencies

In addition to their interest rate policies and changes to their operating frameworks to supply liquidity in local currency, central banks also cooperated more closely to supply liquidity in foreign currencies. Foreign currency refinancing for banks up to one year was facilitated by reciprocal liquidity agreements between central banks. Swap agreements were entered into to provide liquidity in dollars, as well as in euro and swiss francs.

3|1 Eurosystem cooperation arrangements

As of the end of October 2008, the Eurosystem entered into agreements with several central banks in the European System of Central Banks to supply euro liquidity to credit institutions that are not in the euro area. It also signed a similar agreement with the New York Federal Reserve in 2009. The euro liquidity is primarily provided through a currency swap mechanism, along with reverse repos when necessary. Under the swap mechanism, the Eurosystem provides the partner central bank with a euro line of credit, and the partner central bank pays the Eurosystem the countervalue in its national currency in exchange. The provision of euro can also take the form of reverse repos, whereby the partner central bank gives the Eurosystem collateral made up of euro-denominated securities in exchange for the euro liquidity provided.

In a symmetrical arrangement, the US Federal Reserve and the Swiss National Bank have made liquidity lines in US dollars and Swiss francs available to the Eurosystem since 2008 through currency swaps, which the Eurosystem then redistributes to its usual counterparties. As market conditions returned to normal and the demand for these foreign currency facilities declined, it was possible to reduce the number of swaps in the second half of 2009. By November 2009, there was only one 1-week allocation left for both the dollar and the Swiss franc, instead of the several maturities initially offered.

3|2 How swap agreements work: the example of the Fed

Under the swap mechanism, the Fed provides other central banks with a line of credit in dollars and, in exchange, it has access to the equivalent amount in the currency of the partner central bank, which would mean euro in the case of the ECB. Under this agreement, the partner central bank can draw on the line of credit up to a fixed amount or for an unlimited amount to meet the dollar refinancing needs of the commercial banks within its remit. The price of dollar liquidity then corresponds to the rate that the central bank charges the local banks that are its counterparties. These swap agreements with the Fed enabled the ECB to allocate dollars to banks in the euro area with maturities of 1 day to 3 months through its term auction facility, which was instituted in December 2007 and has been operated with a fixed rate since the middle of October 2008. These agreements were initially entered into between central banks in developed countries. They were extended to central banks in emerging countries starting in October 2008 (see table below).

Dollars swap lines from the Fed		
Beneficiary central banks	**Amounts in USD billions**	**Maturity**
ECB	Unlimited	February 2010
United Kingdom	Unlimited	February 2010
Japan	Unlimited	February 2010
Switzerland	Unlimited	February 2010
Australia	30	February 2010
Canada	30	February 2010
Sweden	30	February 2010
Brazil	30	February 2010
Korea	30	February 2010
Mexico	30	February 2010
Singapore	30	February 2010
Denmark	15	February 2010
Norway	15	February 2010
New Zealand	15	February 2010
Euros supply agreement between the ECB and other central banks		
Beneficiary central banks	**Amounts in EUR billions**	
Hungary	5	
Poland	10	
Denmark	12	
Sweden	10	
Fed	80	
Agreement on the Swiss francs supply between the Swiss National Bank and other central banks		
ECB		
Poland		
Hungary		

3|3 Role of the IMF, the other lender

The IMF reformed its lending framework to enhance prevention of economic and financial crises and to help countries cope with balance of payments problems. This led to the creation of a new flexible credit line (FCL), a precautionary facility for crisis prevention. Unlike the never-used short-term liquidity facility, which it replaced, the FCL was used less than one week after its creation, when Mexico requested an FCL of USD 47 billion, which is 1,000% of its quota in the Fund.

The advantage of the FCL is that it is not conditional, even though the eligibility criteria are reviewed when it is renewed. However, compliance with the eligibility criteria is assessed on a dynamic basis, with consideration of corrective measures taken and within a specific institutional framework. Access to the FCL is not limited and it is granted on a case-by-case basis as a precautionary facility for countries with strong economic fundamentals. Therefore, it reduces the stigma that financial markets attach to any reliance of IMF financing. The IMF has approved three FCL agreements for

a total of USD 82 billion since April 2009, for Mexico (Special Drawing Rights — SDR 31.5 billion), Columbia (SDR 7 billion) and Poland (SDR 13.7 billion). These amounts are equivalent to nearly 1,000% of these countries' quotas in the Fund.

As of 31 August 2009, none of these countries had drawn on their FCLs. These countries are deemed to be virtuous with respect to the corrective policies implemented by the authorities, the strength of their economic fundamentals and their determination to implement rigorous fiscal and monetary policies, with low inflation, sound public finances, a solvent banking sector, transparent information, etc. The FCLs have not made these countries immune to the crisis, but they have not lost the confidence of investors. Furthermore, the fact that FCLs are not conditional gives these countries a degree of flexibility when implementing their policies to revive growth.

Consolidate bank liabilities

Measures to support bank financing became necessary in September 2008 as interbank and bond markets seized up. They were implemented from October onwards based on guidance issued by the G7 on 10 October 2008 in Washington and the Eurogroup's action plan for Europe, which was released the next day. Government initiatives were grouped into three main areas: providing government guarantees to help banks obtain medium-term funds, bolstering the capital of financial institutions to ensure their solvency, and acquiring capital interests in banks where necessary.

1| GUARANTEE BANK DEBTS

As regards medium- and long-term refinancing, governments reacted swiftly, setting up mechanisms to guarantee bond issues within the euro area. Member States introduced various systems, in accordance with the guidelines set by the ECB and supervised by the European Commission.

1|1 Recommendations issued by the ECB Governing Council were used to create a harmonised framework for national plans to support bank financing

On 20 October 2008, the Governing Council of the ECB published recommendations on providing government guarantees on bank debt issuance. These recommendations stated that support mechanisms should seek to reduce problems of access to liquidity by improving the functioning of long-term debt markets, while at the same time preserving a level playing field for financial institutions in different countries, avoiding distortions, and ensuring consistency with the ECB's operational liquidity management system and monetary policy objectives.

Rules on pricing government guarantees were set. Pricing for guarantees was based either on banks' CDS spreads (preferably five-year spreads), which reflect the perceived market assessment of credit risk; or, in the case of banks without CDS data, on the median value of CDS spreads for the rating category of the bank concerned.

1|2 Special-purpose entities for bank financing, including France's (SFEF), Germany's (SoFFin) and the US (FDIC)

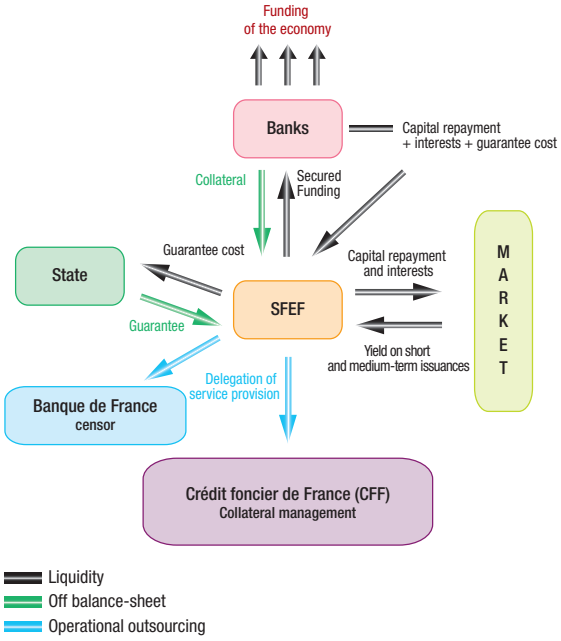
France's SFEF

How it operates

In October 2008, the French government created the Société de financement de l'économie française (SFEF), a new vehicle to help finance troubled banks. The government owns 34% of the SFEF, with the remaining 66% held by a group of seven French banks. It extends medium-and long-term collateralised loans to authorised credit institutions in France. In return, the banks agree to keep lending to individuals, companies and local government.

The SFEF refinances itself on capital markets by issuing AAA-rated government-backed bonds maturing in five years or less, denominated in euro, dollars, sterling or Swiss francs, and then lends to banks. Financing is allocated based on institutions' market share of credit distribution (70%) and total assets (30%). If the borrower bank fails, the SFEF has a direct claim on repayment of the underlying receivables and payment of interest relating to those claims. Its total budget is EUR 265 billion.

Structure of the SFEF



Source: Banque de France, Financial Stability Directorate.

The French approach is original in that the financing vehicle, rather than banks, issues government-backed bonds directly on the market.

Cost of financing for banks

In virtually all European countries, liquidity/refinancing access plans are based on a government guarantee provided to bank issues, with no exchange of "collateral" but with payment of a credit risk premium (median CDS over a given period + 50 basis points (bps) for most countries).[1] In France, the banks pay a premium to the SFEF (which in turn pays it to the government).[2] For each bank, the premium is calculated on the basis of the bank's median CDS spread between 1 January 2007 and 31 August 2008, plus 20 bps. Ultimately, the cost for French banks of refinancing through the SFEF is:

SFEF issuance rate + Median five-year CDS spread between 1 January 2007 and 31 August 2008 + 20 bps[3]

1 *The European Commission validated these plans, which are based on observed market prices.*
2 *The law sets only the following principles as regards determining cost: "the cost of the guarantee will be represented by a commission in addition to interest, in accordance with procedures determined at the time of issuance. This price shall be defined such that the refinancing cost of each credit institution is equivalent to refinancing under normal market conditions". The SFEF is not intended to make a profit (Lagarde, 2008).*
3 *In order to recover the operational costs and to help preserve the level playing field, an add-on fee of 50 basis points should be included in the pricing of the government guarantees on bank debt with maturities exceeding 1 year. In Member States where government guarantees may be collateralised, the add-on fee can be lowered to 20 basis points.*

Controls

The SFEF accepts assets with minimum maturity of three months as collateral, which it manages as part of a pool. Banks are required to renew these short-dated claims as soon as they mature.

The management was delegated to the Crédit Foncier de France, which performs the middle office and back office functions for all of the SFEF's activities. As part of this, it monitors claims pledged as collateral. The mechanism is supervised at several different levels:

• The Commission bancaire supervises on behalf of the State the functioning of the SFEF and its financial position.

• The Banque de France checks in particular that the collateral pledged has not simultaneously been used in the context of monetary policy operations.

• A government representative attends the sessions of the company's board of directors, with a right of veto regarding any decision liable to affect State interests.

• An audit committee, a parliamentary monitoring committee and the Cour des Comptes are also involved in monitoring and supervising the SFEF's activities.

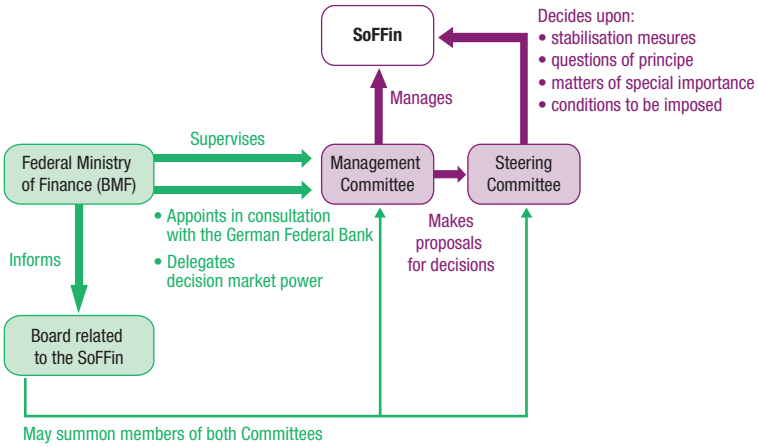
The SFEF ceased activities on 8 October 2009 owing to the improvement on financial markets. As markets returned to almost normal functioning, the government guarantee became less attractive to banks. Since it began operating in November 2008, the SFEF has issued approximately EUR 80 billion on the markets.[4] The 2010 Draft Budget Act provides for the SFEF to be reactivated in "exceptional circumstances" where credit institutions have difficulty in accessing markets. In practice, the reactivation of the SFEF will be left to the government's discretion.

Germany's SoFFin

The *Sonderfonds Finanzmarktstabilisierung* (SoFFin) is a temporary financing vehicle created by the German Financial Market Stabilisation Act (*Finanzmarktstabilisierungsgesetz*) of 17 October 2008. The fund is managed by a public agency (*Finanzmarktstabilisierungsanstalt*), which is part of the Bundesbank, but supervised by the Federal Finance Ministry.

The stabilisation programme provides for three types of measure: guarantee interbank loans up to EUR 400 billion; recapitalise banks (up to EUR 10 billion per institution); and buy high-risk assets acquired by banks prior to 13 October 2008 (up to EUR 5 billion per institution). Regarding the "assistance for bank financing" portion, the fund guarantees issues by German banks (different from France, where the SFEF itself issues government-backed bonds).

4 *Amount for foreign currency issues calculated using the exchange rate at the date of each issue.*



France/Belgium/Luxembourg: shared guarantee (Dexia)

On 9 October 2008, France, acting with Luxembourg and Belgium, decided to set up a guarantee mechanism for Dexia. The guarantee covered all the financing raised by Dexia SA and its subsidiaries, Dexia Banque Belgique, Dexia Banque Internationale in Luxembourg and Dexia Crédit Local, from credit institutions and institutional depositors, either in the shape of loan or deposit agreements, or in the shape of securities or financial instruments. Financing eligible for the guarantee was capped at EUR 150 billion, meaning a maximum commitment for the French government of EUR 55 billion.

The guarantee is covered by an agreement between Dexia and the three governments that sets out the terms of the guarantee, in particular the rate of return. On 19 November, the European Commission approved the agreement, which was signed by Dexia and the three States on 19 December, with the result that the guarantee was operational when implemented. Because the guarantee was not made on a joint and several basis, the three credit rating agencies rated Dexia's guaranteed issues AA+, i.e. the credit rating of Belgium, the main sovereign guarantor, rather than of France, which has a better rating.

The US FDIC (and its instrument, the Temporary Liquidity Guarantee Program —TLGP)

The Federal Deposit Insurance Corporation (FDIC) is an independent agency of the Federal Government that was created in 1933 in response to US bank failures in the 1920s and 1930s. The FDIC has seen its role evolve with the financial crisis and the introduction of the Paulson Plan. The coverage limit of the deposit guarantee has been increased to USD 250,000. The TLGP was created on 13 October 2008 to remedy shortcomings in the functioning of financial markets.

The goal was to strengthen the banking system and provide liquidity, through two mechanisms:

- by guaranteeing new issues of senior bank debt;

- by providing total coverage of the non-interest-bearing transaction accounts that SMEs often use to pay wages.

The TLGP does not depend on taxpayer financing or FDIC funds: it is financed entirely by the institutions that use it:

- through a 10 basis points (bps) annual premium for the guarantee on transaction accounts;

- through an annual premium that varies based on maturity for the guarantee on senior debt issues (these premiums have been increased): 50 bps (later increased to 60 bps) for maturities of less than 6 months, 75 bps (later increased to 85 bps) for maturities between 6 months and one year, and 100 to 125 bps for maturities over 1 year.

On 17 March 2009, the FDIC officially announced that it was extending the TLGP debt guarantee programme until 31 October 2009 but increasing the cost. Thus, the cost of guaranteeing the debt of an FDIC-insured institution was raised by 10 bps[5] or 25 bps[6] (annually) if the debt was issued after 30 June 2009 or matured after 30 June 2012. The increased cost should enable the FDIC to rebuild its deposit guarantee fund, which has been affected by the increased number of bank failures.

2| STRENGTHEN CAPITAL THROUGH RECAPITALISATION AND/OR NATIONALISATION

The European plan to deal with the crisis also included steps by governments to bolster the capital of banks by buying securities issued by banks and potentially by acquiring interests in struggling banks. Here again, countries employed a variety of measures.

2|1 Government-owned corporation, such as France's Société de Prise de Participations de l'État (SPPE)

The SPPE is a public entity created and owned by the government, financed through a government loan. The SPPE provides capital to banks, which, in return, have to increase their lending to the real economy (to households, professionals, businesses, especially SMEs, and local government) by 3% to 4% and make ethical commitments in the areas of governance and compensation. The Act of October 2008 allowed the SPPE to make equity investments up to EUR 40 billion, but with the European Commission's agreement, this was reduced to EUR 23.95 billion (EUR 1 billion reserved for Dexia, not included in the plan).

The SPPE has made two capital injections:

- The first, in October 2008, worth EUR 10.5 billion. On 21 October 2008, the government subscribed to super-subordinated notes issued by the six main French banks. The return on these notes is calculated based on the cost of government securities (five-year government bond for the 20 business days preceding the injection) and the median CDS spread on the subordinated debt of the institutions observed between 1 January 2007 and 31 August 2008. This calculation method has been harmonised at European level. In practice, the coupon is approximately 8%.

5 *20 bps for institutions not guaranteed by the FDIC (any bank that wants to may insure its deposits with the FDIC, but it must in return pay premiums to finance the guarantee fund and be supervised by it.*
6 *50 bps for institutions not guaranteed by the FDIC.*

Capital increase of French banks through the SPPE

(EUR billions)

Financial institution	Amount of first injection	Amount of second injection
Crédit agricole SA	3.0	–
BNP Paribas	2.55	5.1*
Société générale	1.7	1.7
Crédit mutuel	1.2	–
Caisses d'Épargne	1.1	Caisses d'Épargne: 1.1 Banques populaires: 0.95 BPCE: 3
Banques populaires	0.95	

** On 31 March 2009 BNPP issued EUR 5.1 billion in non-voting shares subscribed by the SPPE. Out of this amount, half was used to redeem deeply super-subordinated debt securities issued in December 2008. And the other half represents the amount of capital injected by the SPPE.*

The French government also took a EUR 1 billion stake in Dexia on 3 October 2008.

• The second injection took a different shape: the banks could choose to issue either super-subordinated debt securities (included in Tier 1), or non-voting preferred shares (included in Core Tier 1). The eligible banks and the amounts available were the same as for the first tranche, except for the amount available to the Caisses d'Épargne – Banques populaires group, which was raised with their merger.

The amounts for each bank were calculated to enable an average increase of 50 bps in the capital ratios of each banks. From this perspective, the first injection was a success, insofar as the Tier 1 ratios of the three largest French banks have increased since 31 December 2007.

The coupon of approximately 8% made the deal financially attractive to the government, even while it was supporting the banks. Furthermore, the coupon was an incentive to banks to establish exit strategies to gradually wean themselves off the government's financial support.

By October 2009, all the banks that had received capital assistance from the French government had either said that they would pay back the aid, or had already begun paying it back, particularly through capital increases.

2|2 Illustration of partial or total nationalisation in Europe

Partial nationalisation

In September 2008, France, Belgium and Luxembourg injected EUR 6.4 billion in the Franco-Belgian bancassurer Dexia, as follows:

- Belgian federal and regional authorities and shareholders (Belgian local government and institutional investors): EUR 3 billion
- French government and Caisse des dépôts et consignations: EUR 3 billion
- Luxembourg government: EUR 376 million.

The Belgian and French governments thus became *de facto* owners of Dexia. The French government's interest exceeded 25%, giving it a blocking minority share.

By the same token, Fortis Group, the leading financial institution in Belgium and number-two in the Netherlands in 2007, was forced to ask for government assistance in September 2008. In October, the Netherlands nationalised the firm's Dutch bancassurance business, while Belgium nationalised Fortis Banque, with the intention of selling 75% to BNP Paribas.

In June 2009, the European Commission temporarily authorised the EUR 3.5 billion recapitalisation of KBC and the rescue by Belgium of the banking group's impaired assets.

Bank nationalisation

In February 2008, the British government placed Northern Rock, a British bank facing bankruptcy, under public control. In October 2008, the government directly injected GBP 37 billion into some major banks (Royal Bank of Scotland – RBS, Lloyds TSB and HBOS). Eligible banks committed to increase their Tier 1 by GBP 25 billion, and the government agreed to subscribe to GBP 25 billion in securities in the shape of preferred shares or permanent interest bearing shares. The government subsequently took stakes in the capital of the British biggest banks: Bradford & Bingley, RBS and Lloyds Banking Group, which had just merged with HBOS.

Get illiquid assets off banks' balance sheets

Getting illiquid assets off bank balance sheets was the logical follow-up to measures to support bank financing: after helping banks to finance themselves and hence gradually get back to business (short-term response to an economic shock), the public authorities got to work on cleansing banks' balance sheets (long-term, structural response). They used a variety of approaches to do this, including guaranteeing, ring-fencing and repurchasing risky assets.

1| ASSET GUARANTEE MEASURES

When it provides its guarantee, the government bears only real losses, i.e. not the mark-to-market losses caused by changes in the market value of the guaranteed portfolio. Moral hazard can be reduced by limiting public liability to a portion of the final losses, as in the case of an asymmetric loss-sharing mechanism (see below). Belgium and France (Dexia), the USA (Citigroup and Bank of America), the United Kingdom, the Netherlands (ING) and Belgium (KBC) all introduced fairly similar asset protection arrangements.

In every case:

– losses borne by banks are limited, with taxpayers bearing the tail risk;

– moral hazard is partly limited by having banks continue to bear the first losses and by the co-insurance mechanism for additional losses.

• The French and Belgian governments guaranteed the asset portfolio of FSA AM (Dexia's monoline subsidiary) in the amount of USD 16.9 billion, which enabled the group to significantly scale back its exposure to risk on the US market, subsequently sell off the business and continue to reduce its overall risk.

• In the United States, the US Treasury, the Fed and the Federal Deposit Insurance Corp (FDIC) signed two individual agreements: one to guarantee USD 306 billion of toxic assets held by Citigroup, of which 10% was guaranteed by Citi group, 25% by the Troubled asset relief program (Tarp), 10% by the FDIC and the rest by the Fed; and the other to guarantee USD 118 billion of toxic assets held by Bank of America-Merrill Lynch according to a similar scheme.

• The United Kingdom's Asset Protection Scheme has a maximum budget of GBP 500 billion. It provides eligible financial institutions (UK deposit banks with over GBP 25 billion in assets, including subsidiaries of foreign banks) with protection against future losses on portfolios of commercial or residential mortgages, asset-backed securities (ABS) or leveraged loans, via an "insurance policy". Participating banks bear first losses up to 10%, with the Treasury providing protection against 90% of future losses, in return for a fee.

• The Netherlands adopted the same approach for ING. The Dutch government guaranteed up to 90% of bank's securitisation portfolio backed by risky residential MBS, with a large premium over the market value.

• The Belgian government provided KBC with insurance against future losses. The guarantee covers assets worth a notional EUR 20 billion: EUR 5.5 billion in super senior CDOs and EUR 14.4 billion in exposure to MBIA, a US monoline. Beyond an initial amount of EUR 3.2 billion to be borne by KBC, the government will insure against 90% of future losses, including the next two billion through an injection of capital in the shape of ordinary shares.

2| RING-FENCING MEASURES

To avoid having the government invest in or nationalise banks, some countries took a different route by setting up one or more "bad banks" to take doubtful assets off banks' balance sheets.

Countries used different methods to ring-fence assets.

2|1 One bad bank for each German bank

On 3 and 10 July 2009, Germany adopted "bad banks" legislation, aimed at restarting lending and encouraging consolidation by Landesbanken. Although the approach is based on the classic "bad bank" rationale, it has a number of distinctive features:

– doubtful assets are neither centralised with one bad bank nor transferred to the public-sector balance sheet. Rather, each bank has the option of creating its own bad bank to which it may transfer assets;

– the government is involved solely as a guarantor.

These arrangements relieve the government of immediate spending obligations and minimise the losses borne by taxpayers. The government guarantees bonds issued by the bad banks in return for doubtful assets, but any losses on the assets are ultimately borne by bank shareholders. The German scheme is particularly sophisticated in that it has one mechanism for commercial banks (the SPV model) and another for the regional banks (consolidation model). The regions also have the option of setting up their own bad banks.

In the SPV model, the only eligible assets are structured products

Each bank creates a bad bank to which it transfers toxic assets based on their book value at 30 June 2008 with a 10% discount. In exchange, the bank obtains bonds issued by the SPV that are covered by a government guarantee (via the SoFFin) and whose coupon and redemption at maturity are financed by the cash flow from the transferred assets. The bank will pay the SPV the difference between the value of assets at the time of the transfer and their "fundamental" value, in the shape of annual payments (over a maximum of 20 years). When the securities mature, the bank will have to bear any losses.

In the consolidation model for regional banks, assets of any sort may be transferred

Each bank may create a "liquidation structure" to which to transfer the affected assets. Shareholders (regions and savings banks) bear any losses at liquidation.

Participating banks do not have to meet demanding obligations in return: commercial banks have to accept stress tests and salary caps, while Landesbanken make an agreement in principle to take restructuring steps. Uncertainties persist, notably concerning the extent of participation, the effect in terms of restarting lending, and financing for the scheme.

2|2 Spain: a fund for the orderly restructuring of the banking system intended for small financial institutions (Fondo de Reestructuración Ordenada Bancaria, FROB)

The Spanish government has introduced a number of mechanisms to support financial institutions since the crisis began, including extending deposit protection and setting up a fund to acquire financial assets as well as a system of government guarantees for bank issues.

However, after Moody's, a credit rating agency, downgraded several Spanish banks on 15 June 2009, the government introduced additional measures to facilitate the process of restructuring struggling deposit banks (by seeking to develop private solutions, such as mergers) and to make them more solvent. The aim is to ensure that solvency problems at small institutions do not undermine the confidence of large listed banks.

The FROB's initial capital was EUR 9 billion, but this may be tripled in 2009 and increased tenfold thereafter, provided the Finance Ministry agrees. The government is providing three-quarters of the funds, with the remainder coming from a private deposit guarantee agency. A committee steers the scheme, which is run by the deputy governor of the Banco de España. The fund allows the central bank to step in to assist banks, buy their shares.

The procedure is as follows:

Stage 1: systematically attempt to find private-sector solutions before tapping the fund;

Stage 2: begin by using the conventional crisis resolution mechanism (DGS) to improve the solvency of banks, which must present a plan for restoring viability (the FROB lends cash at market rates to the various guarantee funds already in place under Spanish law and whose role is to bolster the capital of financial institutions);

Stage 3: the FROB steps in to help institutions that fail to return to viability unaided and that have not proposed an acceptable plan.

The FROB's involvement may have several consequences: replacement of the board; preparation by the FROB of a restructuring plan within a month proposing either a merger or a sale, or an auction of some or all assets and the financial support of the FROB (notably acquisition of capital interests). In the event of a merger of two entities, the fund may acquire preferred shares convertible into shares issued by the entities. Issuing entities have up to five years to repay borrowed funds.

2|3 A public ring-fencing structure in Ireland

In August and then September 2009, the Irish government presented the main outline of draft legislation to set up a bad bank, known as the National Asset Management Agency (NAMA), to relieve banks' balance sheets of the toxic assets inherited from Ireland's pre-crisis property boom. Adopted in mid-September 2009, the scheme has a budget of EUR 54 billion. The new structure has taken on loans worth a nominal EUR 77 billion at a 30% discount. The government is betting that the prices of the assets backing the loans will rise by 10% on average. These loans comprise EUR 49 billion in land and development loans and EUR 28 billion in property loans. Two-thirds of the assets financed are located in Ireland, and 20% are in the United Kingdom.

The NAMA, an independent agency, is funded by the National Treasury Management Agency (NTMA). When they transfer assets to the bad bank, banks must recognise a loss in their books corresponding to the difference between the book value of the assets and the amount paid by the NAMA. In exchange for the assets that they transfer, banks receive government-backed bonds issued by the NAMA, which enables them to improve their liquidity profile. Once the assets are transferred, they disappear from the banks' balance sheets and become the property of the NAMA, which is entirely responsible for managing them. Any losses are thus ultimately borne by the government.

This is a classic bad bank scheme, with a central defeasance structure and real transfer of risk, because any losses on the transferred assets are borne by the government, not shareholders. In this sense, the Irish scheme differs from the German approach, which allows each financial institution to create its own bad bank, and where the final losses are absorbed by bank shareholders, not the government.

2|4 The Swiss Stab Fund

Of all the Swiss banks, UBS was hardest hit in Europe by the credit crisis, posting around USD 48 billion in losses and write-downs. In October 2008, the government provided it with massive support through Stab Fund, a bad bank managed by the Swiss National Bank, which took on up to USD 60 billion of UBS's risky assets. The government also became a shareholder of the bank, acquiring a 9% interest, providing UBS with CHF 6 billion via convertible bonds in October 2008. The Federal Finance Department ultimately sold the remaining coupons on the bonds back to UBS for a cash payment of CHF 1.8 billion, thus recouping its initial investment in UBS and turning a profit.

Comparison of governments' bad bank and asset protection schemes

	Bad bank	Asset protection
Objective	Limit the losses borne by banks and thus reduce the uncertainty preventing them from lending to the economy.	
Principle	Toxic and/or illiquid assets are transferred to an outside structure that will ultimately bear any losses. Several approaches are possible: just one publicly owned bad bank for the entire banking system, or an individual structure for each bank (German model).	The government guarantees certain assets (identified in advance) on bank balance sheets against future losses, in return for payment of a premium.
Location of assets	Assets are immediately and definitively taken off banks' balance sheets and will be managed separately by the bad bank, which limits potential conflicts of interest.	Assets remain on banks' balance sheets.
Main implementation challenges	Need to value transferred assets, which may be extremely difficult during a crisis.	It is hard to strike the right balance in setting the premium paid to the government for the guarantee (too low: high cost to taxpayers; too high: little appeal for banks).
Budget cost	Large and immediate.	No immediate cost. The scheme will have a cost further out, but only in terms of actual losses on the guaranteed portfolio.
Scope of assets	Postponing the cost to the government means that guarantee schemes can cover a wider spectrum of assets than bad bank programmes.	
Moral hazard and loss-sharing	Asset guarantee mechanisms offer better protection against moral hazard: • shareholders absorb the first tranche of losses (for example 10%) or beyond. However, the government covers the bulk of losses. • this loss-sharing mechanism gives banks an incentive to maximise the recovery rate in the event of default.	

3| Asset purchase measures: US public-private investment program (PPIP) for toxic assets

The US Treasury and the FDIC launched a public-private partnership scheme in March 2009 aimed at removing doubtful and toxic assets from the balance sheets of financial institutions insured by the FDIC.

The Treasury earmarked USD 30 billion for the scheme (revised down in July 2009 from an initial USD 75-100 billion), to be taken from the Troubled Asset Relief Program (Tarp), with a view to raising, with the contribution of private investors, between USD 500 billion and USD 1,000 billion. A few months on from the announcement, investors had contributed less than expected, and the Treasury announced in July that in all USD 40 billion had been raised.

The plan comprises two mechanisms that include private investors: a Legacy Loan Program for banks' toxic debts , and a Legacy Securities Program for the securities market, which is actually an extension of the term asset-backed securities loan facility (TALF) to securities that were rated AAA when they were first rated. As regards the Legacy Loan Program, the FDIC, which advises banks, provides a guarantee to investors and financing assistance to interested investors. Loans are then sold through an auction system, with the highest bidder getting access to FDIC-backed financing. The first transactions were scheduled to take place in early October 2009.

Even if the programme has been less successful than expected, it is unique in involving the private sector at two levels, i.e. private investors both take part in the price-setting process and can get a government guarantee to finance their acquisitions. The appeal of this approach is that it allows buyers to offer sellers a higher purchase price than would be possible without the debt component.

Transfer risk to government

1| EFFECT OF STIMULUS POLICIES DURING THE CRISIS

1|1 Governments have provided large amounts of money...

Steps taken by governments from Autumn 2008 were justified by the magnitude of the downturn in economic activity in the wake of the financial crisis. Over and above the automatic stabilisers, discretionary fiscal stimulus measures were vital to sustain final demand.

These measures have caused government deficits to widen significantly. According to forecasts released by international institutions, deficits are expected to increase in 2009 by between 5 and 7 points of GDP in the United States and between 4 and 5 points in Japan and the euro area. The deterioration will likely continue in 2010, albeit at a much slower pace, amid continued expansionary fiscal policies and a gradual economic recovery.

Government debt and deficits
(% of GDP)

	Government deficit				Government debt			
	2008	2009	2010	2011	2008	2009	2010	2011
United States								
EC	-6.4	-11.3	-13.0	-13.1	70.7	64.8	75.1	87.3
OECD	-6.5	-11.6	-11.3	-9.7	70.0	84.2	93.4	100.7
IMF	-5.9	-12.5	-10.0		70.4	84.8	93.6	
Japan								
EC	-3.8	-8.0	-8.9	-9.1	173.1	189.8	197.6	206.0
OECD	-2.7	-7.4	-8.2	-9.5	172.1	189.5	197.5	204.7
IMF	-5.8	-10.5	-10.2		196.6	218.6	227.0	
Euro area								
EC	-2.0	-6.4	-6.9	-6.5	69.3	78.2	84.0	88.2
OECD	-1.9	-5.9	-6.5	-6.0	69.5	78.6	84.5	89.3
IMF	-1.8	-6.2	-6.6		69.2	80.0	86.3	
France								
EC	-3.4	-8.3	-8.2	-7.7	67.4	76.1	82.5	87.6
OECD	-3.4	-8.2	-8.6	-8.0	68.1	76.9	84.9	91.7
IMF	-3.4	-7.0	-7.1		67.5	76.7	82.6	
Germany								
EC	0.0	-3.4	-5.0	-4.6	65.9	73.1	76.7	79.7
OECD	0.0	-2.8	-4.6	-4.1	65.9	73.8	77.5	80.4
IMF	-0.1	-4.2	-4.6		67.1	78.7	84.5	

Sources: OECD and European Commission Autumn 2009 forecasts, IMF World Economic Outlook October 2009.

Three factors are essentially behind the crisis-related increase in government deficits:

- the sharp decline in tax revenues due to the crisis (part of the effect of the automatic stabilisers, which also includes the automatic increase in spending on unemployment insurance and related social benefits);

- a squeeze effect resulting from the fall in tax revenues and the increase in non-cyclically sensitive public expenditures (especially the public sector wage bill and social transfers);

- the impact of government stimulus plans.

The respective importance of these factors varies from country to country. **Automatic stabilisers are reckoned to be stronger in the euro area than in the United States or Japan** because mandatory levies are higher, in connection with Europe's more developed welfare system. Equally, however, the high level of government spending in most euro area countries makes these expenditures more rigid. As a result, the spontaneous increase in euro area government deficits is greater during a crisis than in the United States or Japan, and euro area countries have, overall, less need to take discretionary measures to supplement the effect of the automatic stabilisers. The economic blocs have created variously sized fiscal stimulus plans to respond to the crisis: measures introduced in the euro area will cost 1.1 point of GDP in 2009 and 0.8 of a point in 2010; the IMF estimates that Japan's plan is equivalent to 4.2 points of GDP over 2009-2010; while measures implemented in the United States[7] are expected to increase the government deficit by 2 points of GDP in 2009 and 1.8 point in 2010.

However, these estimates may be revised upwards. Uncertainty over the pace of the recovery in 2010 has prompted many governments to announce that they are extending measures that were initially intended for 2009 only.

1|2 ... although opinions differ as to their impact on activity

The fiscal stimulus plans allowed economies to mitigate the short-term effects of the recession. However, it is hard to determine how much these measures support activity in the medium term, because of the considerable uncertainty surrounding estimates of the fiscal multipliers, particularly owing to the unique nature of the current crisis. Specifically, it is harder to predict how economic agents will respond to the government measures in an unusual environment in which two countervailing factors are at work. On the one hand, the crisis has increased the proportion of households facing credit constraints, i.e. that are unable to adjust their consumption over time. These households will tend to consume the additional income provided by the fiscal stimulus immediately, thereby giving the measures maximum efficiency. On the other hand, Ricardian effects may develop in response to the downturn in public finances; that is, households expect a future increase in taxation and save a significant proportion of the additional income provided by the fiscal stimulus, whose efficiency is therefore reduced. The temporary and targeted nature of the stimulus measures should reduce the likelihood of such effects. But economic agents must be reassured that governments remain credible in their determination to consolidate the public finances once the crisis is over.

7 *The United States has introduced two differently sized plans, one after the other. The Economic Stimulus Act passed in February 2008 is smaller than the American Recovery and Reinvestment Act of February 2009.*

In its spring 2009 forecasts, working on the basis that multipliers associated with increased public spending (government investment in particular) are greater than those of tax reductions, the European Commission estimated the impact of the stimulus plans on euro area growth to be within a range of 0.5 to 1 point of GDP in 2009 and between 0.4 and 0.7 of a point in 2010.

Panorama of the main measures taken by governments to support real economy since February 2009 in the euro area, the United Kingdom, Japan and in the United States

Country	Announcement/ Context	Measures announced	Amount/ comments
France	Auto industry agreement / 9 February 2009	Government lends directly to carmakers and their finance subsidiaries (at 6% over five years). In return, carmakers have made commitments on jobs and on keeping assembly plants in France.	EUR 6.7 billion
	Social summit / 18 February 2009	• One-off bonus of EUR 500 for certain employees • Creation of EUR 2.5-EUR 3 billion social investment fund to coordinate employment and vocational training measures • Two-thirds reduction in income tax for over four million French households in the lowest tax bracket. A tax credit for households that are just over the first bracket could be used to extend the measure to another two million households. • Additional benefit of EUR 150 a month from June for the three million families that receive the "back to school" benefit • Vouchers worth EUR 200 per household for over one million households for the purchase of personal services (benefits for the elderly, childcare, disabled children, etc.) • Incentive for companies to raise partial unemployment benefits to 75% of gross pay, through special agreements with the government	EUR 2.6 billion
Spain	April 2008/ after elections	• Minimum wage raised from EUR 570 to EUR 800 by 2012 • Tax cut • EUR 400 payment per household as from July • Tax incentives for home renovations • Elimination of wealth tax, changes to death duties • 30% cut in administrative charges for companies by 2012	Around EUR 20 billion over two years, o/w EUR 10 billion in 2008 (1% of GDP)
	August 2008/ stimulus plan	• Measures to support SMEs • Construction of low-cost housing	EUR 20 billion (o/w a portion taken from the measures announced in April)
	November 2008/ stimulus plan	• Exemptions from levies and payments for hiring unemployed people • R&D spending • Assistance for the auto sector	EUR 10.9 billion
	Total		**Around EUR 40 billion over two years, or 3.7% of GDP**
Italy	May 2008/ after general election	• Housing tax lifted • Tax exemption for overtime and productivity bonuses (2.7 billion) • Financing provided through reduced government spending	
	29 November 2008/ Anti-Crisis Decree	• Set of measures to lower spending and increase revenues to provide the funds used in 2009 and 2010 to help households (EUR 3 billion, o/w 2.4 beginning in 2009 for low-income households), reduce corporate income tax (around EUR 2.3 billion) and personal income tax (EUR 0.7 billion), and stimulate investment	EUR 5.6 billion in 2009 and EUR 3.4 billion in 2010 (0.6% of GDP overall)

.../...

Country	Announcement/ Context	Measures announced	Amount/ comments
United Kingdom	September 2008	• Urgent housing market support package • Aid to families affected by rising energy prices	GBP 910 million paid by energy companies over three years
	25 November 2008 Stimulus plan included in pre-budget	• Cut in the standard VAT rate from 17.5% to 15% from 1 December 2008 to 1 January 2010 (GBP 12.5 billion, including GBP 3.8 billion before March 2009) • Aid to the poorest households (benefit increases brought forward, savings incentives for the poorest sectors of the population, etc.) • Construction and renovation of social housing • Abandonment of planned company tax increases • Payment facilities for SMEs • Tax exemptions on foreign dividends • Partial immediate financing through increased duties on tobacco and alcohol	GBP 20 billion (around 1.5% of GDP) injected by 2011, including GBP 16.3 billion in the 2009-2010 budget Financing measures planned in 2011-2012
	Early January 2009	• New Deal construction programme (schools, hospitals, infrastructure, renewable energies) aimed at creating 100,000 jobs. • Golden Hello subsidy of up to GBP 2,500 to hire and train people on unemployment benefits for over 6 months • Training of 35,000 apprentices • Government guarantee on loans to SMEs (up to GBP 22 billion)	GBP 10 billion GBP 0.5 billion GBP 0.14 billion
	Total		**GBP 31.5 billion (2.2% of GDP)**
Japan	August 2008 October 2008 December 2008	• "*Comprehensive Immediate Policy Package – Easing Public anxiety*" • "*Measures to Support People's Daily Lives*" • "*Immediate Policy Package to Safeguard People's Daily Lives*" The three plans have the same objectives and are chiefly focused on 2009: – Support consumer confidence through immediate financial assistance to households – Improve the healthcare system – Increase assistance for the elderly – Childcare and education benefits – Support for "non-regular" workers (fixed-term contracts, part-time workers, temps) – Increased unemployment benefits – Promote consumer spending and environmentally-friendly production.	JPY 2,000 billion JPY 6,000 billion JPY 4,000 billion
	April 2009	• "*Policy Package to Address Economic Crisis*" – Ensure orderly markets – Support employment and welfare – Revitalise local economies through public works – Support demand among households with young children – Tax breaks for households and companies that are active in R&D – Stimulate long-term growth – In all, between 1.2 and 2 million jobs are supposed to be created.	JPY 15,300 billion, (EUR 115 billion) 3% of GDP JPY 2,600 billion JPY 2,300 billion JPY 2,400 billion JPY 1,700 billion JPY 100 billion JPY 6,200 billion
	Total		**JPY 27,300 billion (5.4% of GDP)**
United States	February 2008	• Tax breaks for low and mid-income families, tax incentives for companies and measures to rescue the housing sector	USD 152 billion (1.1% of GDP) over four years
	February 2009/ after President Obama took office	• Tax credits for households and businesses, capital spending (notably on infrastructure), support for States in financial difficulty, financing for social programmes	USD 790 billion (5.8% of GDP) over ten years

The Japanese authorities estimate that the impact of their stimulus plans will be just an additional 2.9 points of GDP over the fiscal year ending in March 2010. Accordingly, Ricardian effects are estimated to be large in Japan, with a multiplier of less than one. The parlous state of the Japanese job market is one reason for the high propensity of households to save.

In the United States, the impact of stimulus plans on growth is estimated at between 1.4 and 3.8 points of GDP in 2009, between 1.1 and 3.4 points in 2010 and between 0.4 and 1.2 point in 2011.

2| RISKS IN TERMS OF THE SUSTAINABILITY OF PUBLIC FINANCES

The increase in government deficits and debt caused by the economic and financial crisis raises the question of the sustainability of fiscal policies. A fiscal policy is said to be sustainable if it does not cause a build-up of debt that cannot be covered by future budget surpluses without major changes. Government debt dynamics depend on three factors: the stock of accumulated debt, the difference between the apparent interest rate (nominal or real) on the debt and the growth rate of GDP (again nominal or real, as appropriate), and the level of the primary balance, which depends on the respective growth rates of tax revenues (this rate is itself a function of growth) and of government spending.

For the debt ratio to stabilise, assuming fiscal policy remains unchanged, the primary balance must remain at a sufficiently high level to cover the difference between the interest rate on government debt service and economic growth. Several situations are possible:

- if the interest rate is equal to the growth rate, a primary balance in equilibrium keeps the government debt stable;

- if the interest rate exceeds growth, the primary balance must be in surplus to stabilise the government debt. Otherwise, a snowball effect will result, with a self-sustaining increase in debt owing to the mounting debt-servicing burden;

- if the interest rate is lower than growth, the primary balance may be in deficit without the debt ratio necessarily increasing.

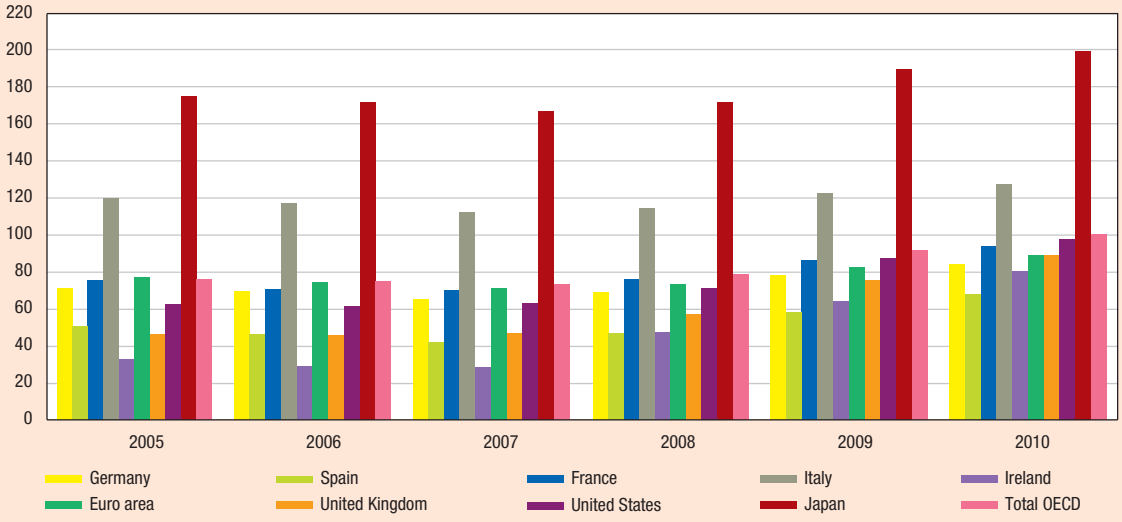
This relationship shows that public debt dynamics result from both the economic situation and past and present economic policy. In particular, the apparent interest rate on the debt depends on both the direction of monetary policy and the risk premium demanded by investors for holding the country's government debt securities. Meanwhile, the stock of accumulated debt is an indicator of the previous direction of fiscal policy. And the higher the government debt to start with, the larger the primary surplus needed to stabilise the debt ratio (where the interest rate exceeds the growth rate). In other words, in the current situation of weak economic growth rates coupled with expansionary fiscal policies, the threat of a snowball effect is greater for countries with higher pre-crisis levels of government debt, slashing their room for manoeuvre in fiscal policy going forward (see Box 3 for the French case). Moreover, the additional demand placed by governments on bond markets could push up long-term interest rates and be a source of inflationary pressure.

Thus, in developed countries, even if the fall in growth is viewed as temporary, the current recession is translating into an increase in government debt levels and deeper primary deficits. Gross government debt in the OECD, which was 74% of GDP on average in 2007, could rise to 100% in 2010. All countries are affected by soaring debt, but those with high levels going into the crisis are especially at risk. In the euro area, several countries, including Italy, Greece and Belgium, will go past 100% of GDP by end-2010, while the United Kingdom, France and Germany will be at 80%. In Japan, the deeper primary deficit (8.1% of GDP), coupled with negative growth in 2009 and subdued growth in 2010, will result in debt of close to 200% of GDP over this horizon. Only the prospect of low long-term interest rates lessens the risk of unsustainability. In the United States, debt is unlikely to exceed 70% of GDP in 2010 and should therefore remain moderate compared with other countries, though very high relative to historical levels.

These factors mean that economies need to undertake major efforts towards fiscal consolidation as soon as they come out of recession. In general, this will imply more than merely withdrawing stimulus-plan measures. The aim should be to build up primary budget surpluses to enable government debt to get back to pre-crisis levels, or lower levels if those were already unsustainable. Consolidation through spending cuts is generally considered to be the most effective way of achieving this goal.

Gross government debt*

(% of GDP)



*see glossary.
Sources: OECD – Banque de France.

3| RISING SOVEREIGN RISK

The severe deterioration in public finances raises a number of questions. How do we measure the risk of a government defaulting on its debt? Can we still talk about risk-free interest rates to describe the yields on government securities?

3|1 July 2007-March 2009: historical increase in sovereign CDS premiums

Sovereign CDS premiums re-correlate across the board

CDS premiums have tended to rise since July 2007, reflecting the general deterioration in the economic climate. From October 2008, CDS premiums, as well as correlations across these premiums, surged in emerging countries and developed countries alike.

The transfer of risk to sovereign balance sheets is dragging CDS premiums upwards

There are two reasons why the CDS premiums of developed countries headed upwards from end-2007 to March 2009: the size of the financial commitments made by governments to support banks (increase in maximum deposit guarantees, recapitalisations, backing for bank debt) and the rapid run-up in public-sector debt following the introduction of bail-out plans by different governments. These plans have led to a transfer of risk from financial institutions to sovereign balance sheets. A trader believing that the deterioration in the public accounts is likely to lead in the short term to higher sovereign risk premiums, and by extension CDS premiums, can buy protection in hopes of making a mark-to-market gain by selling the protection again later.

Increased trading volumes in sovereign CDSs

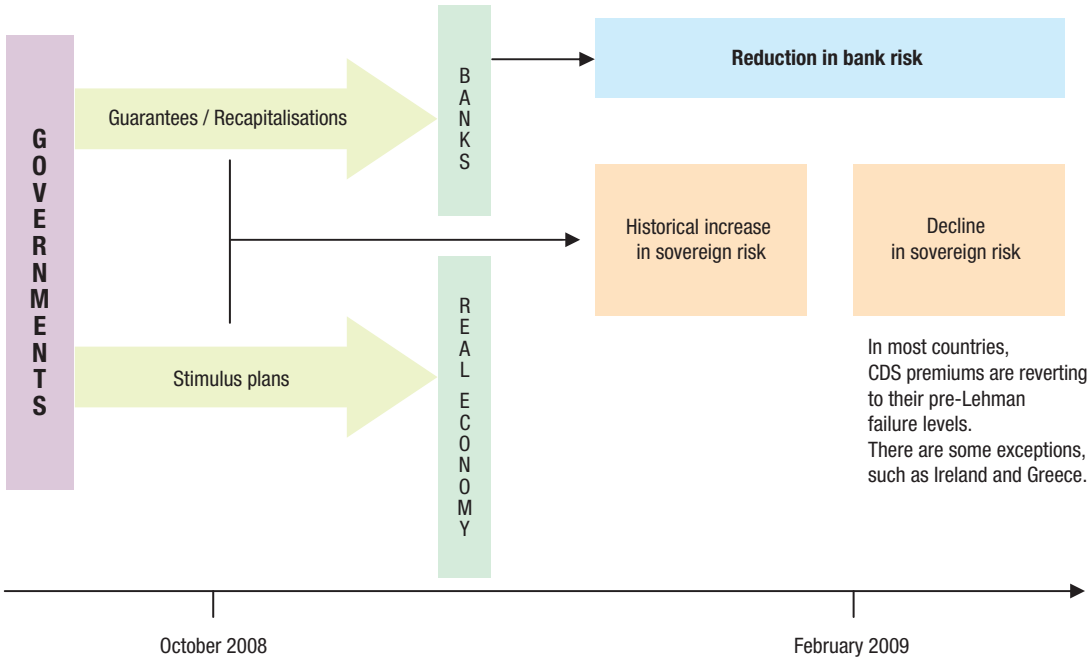
Increased trading volumes in sovereign CDSs gives credence to the possibility of greater activity on this market. And indeed, the gross notional amounts for the main developed sovereigns, a good indicator of activity in individual CDSs, have significantly increased in most cases.

Box 8 Sovereign credit risk: a market benchmark

Sovereign credit risk naturally shapes returns on the sovereign debt market and directly affects the ability of investors, banks and financial institutions to diversify risk in their debt portfolios. Sovereign credit risk is a major determinant in the composition of international portfolios and influences cross-border capital flows. Furthermore, the nature of this risk affects the ability of sovereigns to access global debt markets and the risk premiums that they must pay to obtain capital.

Just as it is possible to invest in a corporate credit default swap (CDS), an investor may buy or sell protection on a sovereign. The basic mechanism is exactly the same as for a corporate CDS: the protection buyer pays a premium to the seller until the contract matures; if a credit event occurs, the buyer of protection may sell the debt of the defaulting entity to the protection seller at par value.

In practice, credit events on sovereigns result principally from debt restructuring (cf. Argentina in August 2002), in the form of payment rescheduling, for example. In the case of emerging countries, they may also involve a payment default (cf. Ecuador in 1999 and 2008). More rarely, a sovereign default may be caused by debt repudiation or a debt moratorium (cf. Mexican debt moratorium in 1982).



3|2 What are the consequences of higher sovereign premiums?

For banks and corporates: dislocation in the debt market

Naturally, there is the question of whether the sovereign CDS premium impacts the corporate premium, or the other way around. Since the crisis began, corporate premiums, particularly of financial institutions, have reached record highs.

Banks

Market participants have welcomed the government's assistance for the finance sector, which initially made it possible to slow the increase in bank CDS premiums. Subsequently, the massive increase in government debt caused sovereign premiums to widen almost automatically. This led to a temporary disconnect between financial and sovereign CDS premiums (cf. diagram). From February 2009, the increase in sovereign risk and bank credit risk once again became mutually reinforcing. In other words, the CDS market may structurally fuel its own rise, through the relationship between sovereigns and financial institutions and the transfer of risk from bank balance sheets to public accounts through the bail-out plans.

Corporates

Strain on sovereign premiums is not without consequence for corporate financing. In February 2009, many companies in developed countries had CDS premiums that were lower than that of the government, worsening their financing terms.

The break in the fundamental links between these different derivatives market segments can be seen in the underlying bond market. The yield on government issues represents a benchmark and provides the lower bound for corporate issues. But such a benchmark does not exist on the CDS market. Thus, while CDS premiums for certain companies are lower than that of the sovereign, the same companies' bonds have a positive spread over government issues. In theory, the no-arbitrage condition for the bond market and the CDS market[8] requires the basis, i.e. the differential between the CDS premium and bond spread for an entity and a given maturity, to be zero.[9] A correction seemed inevitable and occurred from March 2009 onwards.

For sovereigns: possible impact on agency ratings

Since early 2008, some developed countries have been downgraded by one of the three main credit rating agencies. Of these countries, several are part of the euro area (Greece, Italy, Portugal, Spain, and Ireland). Moreover, the heavy pressure on sovereign CDSs caused a downgrade in ratings implied from CDS premiums. Thus, whereas the United Kingdom is rated AAA by Standard & Poor's, Fitch and Moody's, its rating derived from CDS premiums is AA+. The differential is even greater for Ireland, which is rated AA+ but whose implied rating is BBB, i.e. on the edge of speculative grade (cf. chart "Disconnect between credit ratings and CDS-implied ratings" below).

As a rule, the implied rating of a corporate entity is a fairly good predictor of its future rating.[10] Although comparisons between corporate and sovereign ratings can only be taken so far, such a differential between ratings and implied ratings would seem to be hard to sustain over the long run. Ultimately, a sovereign downgrade would worsen financing terms not just for government debt, but also for corporate debt.

3|3 March-October 2009: subdued decline in sovereign CDS premiums for developed economies

The sovereign CDS premiums of developed countries hit record levels, peaking in February 2009, after governments announced far-reaching stimulus plans in October 2008. Ireland was trading at 400 basis points, which means more than 300 basis points over the CDSs of countries that were reckoned to be sounder, such as Germany and France.

From March/April 2009 onwards, as governments reported record deficits, CDS premiums halved compared with February levels. By October 2009, they were virtually back to where they had been before the Lehman Brothers failure.

The persistent disconnect between CDS premiums and credit ratings may mean that some advanced countries face further downgrades going forward.

Sovereign CDSs remain more difficult to interpret than corporate CDSs, for at least three reasons:

- defaults on government debt in developed countries are rare, making it hard to estimate recovery rates in the event of failure, which is a key aspect of CDS pricing;

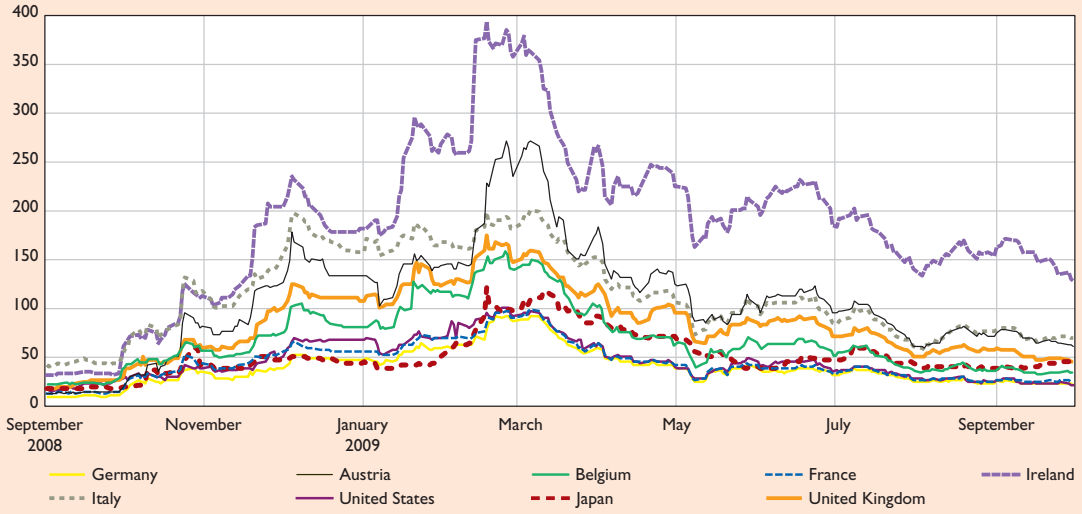
8 *Demonstrated by Duffie (1999), Duffie and Singleton (1999), and Hull and White (2000), among others.*
9 *In practice, a number of factors mean that the basis is never perfectly equal to zero.*
10 *For example, Delphi's CDS-implied rating began to deteriorate around three years before the company defaulted. The company's rating did not begin to fall until six months before the default.*

• a company usually gets a debt grace period before failure, which is not true for governments;

• the market for developed country CDSs is very new and still immature. Virtually inexistent before the financial crisis, it has since grown faster than the overall market. Even so, the amounts traded remain small compared with trading in bonds and corporate CDSs. DTCC, a US clearing house, estimates the notional value of CDSs on US debt at USD 9 billion, or 0.1% of government debt. According to BIS statistics, sovereign CDSs account for just 6% of the total CDS market.

CDS premiums, in developed countries

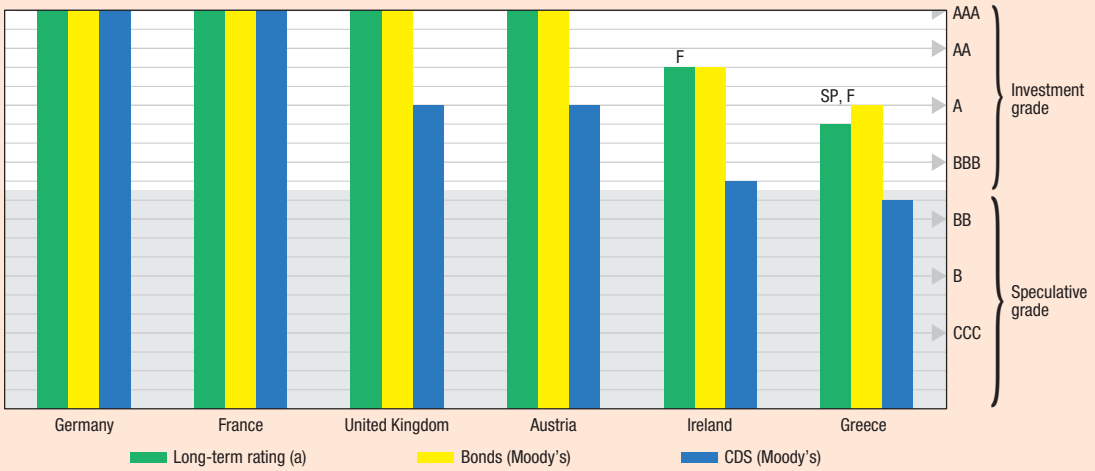
(basis points)



Source: Bloomberg.

Disconnect between credit ratings and CDS-implied ratings

(extracted from bonds and CDS premiums of some countries of the euro area and the United Kingdom – 30 November 2009)



(a) If the credit rating is not the same for the different credit agencies, the lowest rating is held, the agency acronym is indicated (M: Moody's, SP: Standard & Poor's, F: Fitch Ratings).

Sources : Bloomberg, Moody's.

PART 3

IMPROVING THE SUPERVISION AND REGULATION OF GLOBAL FINANCE

The crisis has led to a tightening of microprudential regulation, notably in connection with Basel II. Another aim of these reforms is to add a macroprudential dimension to regulation, taking two aspects into account, namely the risk of procyclicality in the financial system relative to the real economy, and supervision of systemic risk.

"The financial crisis has taught us some very hard lessons. While there are many causes for the crisis, including, possibly, macroeconomic policies, it is also clear that this crisis has forced us to reconsider the way we regulate and supervise the financial system".[1]

It has also become apparent that accounting rules are not always appropriate and that instead of reflecting the real economic situation, they have had a major impact on some behaviors and markets.

In the near term, reform incentives through compensation policies and accounting rules

1| ESTABLISH INCENTIVE COMPENSATION SYSTEMS

The initiatives of the French Presidency generated Europe-wide momentum that allowed the heads of state and government meeting at the G20 summit in Pittsburgh to agree on a set of rules aimed at ensuring that compensation practices in the banking industry are compatible with the goals of financial stability.

The G20 rules are based largely on the work of the Financial Stability Board's (FSB) forerunner, the Financial Stability Forum (FSF). The FSF laid down its principles for sound compensation practices in April 2009, issuing a more operational version in the form of standards in September 2009.

1 *Publication of the Banque de France's Financial Stability Review: "The future of financial regulation". Remarks by Christian Noyer, Banque de France Governor, London, 4 September 2009.*

Extract from the G20 Leaders' Statement at the Pittsburgh summit on 24-25 September 2009

"Reforming compensation practices to support financial stability: excessive compensation in the financial sector has both reflected and encouraged excessive risk taking.

Reforming compensation policies and practices is an essential part of our effort to increase financial stability.

We fully endorse the implementation standards of the Financial Stability Board aimed at aligning compensation with long-term value creation, not excessive risk-taking, including by:

- *avoiding multi-year guaranteed bonuses;*

- *requiring a significant portion of variable compensation to be deferred,[2] tied to performance and subject to appropriate clawback and to be vested in the form of stock or stock-like instruments, as long as these create incentives aligned with long-term value creation and the time horizon of risk;*

- *ensuring that compensation for senior executives and other employees having a material impact on the firm's risk exposure align with performance and risk;*

- *making firms' compensation policies and structures transparent through disclosure requirements;*

- *limiting variable compensation as a percentage of total net revenues when it is inconsistent with the maintenance of a sound capital base;*

- *ensuring that compensation committees overseeing compensation policies are able to act independently.*

Supervisors should have the responsibility to review firms' compensation policies and structures with institutional and systemic risk in mind and, if necessary to offset additional risks, ***apply corrective measures, such as higher capital requirements, to those firms that fail to implement sound compensation policies and practices****. Supervisors should have the ability to modify compensation structures in the case of firms that fail or require extraordinary public intervention.*

We call on firms to implement these sound compensation practices immediately.

We task the FSB to monitor the implementation of FSB standards and propose additional measures as required by March 2010."

2 *If payment is deferred, a system of malus arrangements can be put in place in the event of negative performance.*

These principles and standards are organised around four major themes:

• **effective governance**: the FSB states that large financial institutions should set up a remuneration committee responsible for the way in which compensation systems are designed and operate. The Board also says that the remuneration of employees in the risk and compliance function should be determined independently of the business areas they oversee;

• **sound management** to give greater consideration to the firm's risk exposure: the FSB considers that multi-year guaranteed bonuses are inconsistent with sound risk management. The FSB also says that a substantial portion, i.e. between 40% and 60%, of the variable compensation paid to senior executives and other employees whose actions have a material impact on the risk exposure of the firm should be payable under deferral arrangements over several years. Likewise, a substantial proportion, such as more of 50%, of variable compensation should be awarded in shares or share-linked instruments;

• **fuller disclosure**: the FSB says that financial institutions should disclose to the public on a timely basis an annual report giving details of their compensation systems and the amounts awarded;

• **rigorous supervisory oversight**: according to the FSB, supervisors should take prompt corrective measures if financial firms fail to comply with these standards, as provided for under Pillar 2 of Basel II. It also stresses the importance of close international coordination between supervisors in this area.

European countries have made the most progress in transposing these internationally negotiated rules. Four of them –France, the United Kingdom, Germany and the Netherlands– have already introduced new rules into national law or are about to do so.

2| REVISE ACCOUNTING RULES

Serious turbulence in financial markets revealed weaknesses in accounting standards. This is true both for International Financial Reporting Standards (IFRS), published by the International Accounting Standards Board (IASB) and applicable to listed companies in the European Union, and for United States Generally Accepted Accounting Principles (US GAAP), issued by the Financial Accounting Standards Board (FASB), which apply in the United States.

The shortcomings include:

• inadequate provisioning, which not only underestimated credit risk but also, and more importantly, came too late in the economic cycle;

• reliance on fair value accounting, which bore no relation to the real value of some financial instruments traded in markets that had become illiquid;

• a financial instrument classification that was too complex to be applied uniformly;

• widespread use of securitisation, made easier by its accounting treatment;

• differences between IASB and FASB standards, which may have distorted competition between banks.

These issues were not the root cause of the financial crisis but they certainly accentuated some aspects of it. Consequently the reform of accounting standards, especially those relating to financial instruments, became a priority on the G20 agenda. Furthermore in August 2009 the Basel Committee published guidelines on accounting reforms relating to financial instruments.[3]

Box 9 Basel Committee recommendations on financial instrument measurement (IAS 39)

In light of the crisis, no expansion of fair value accounting

Fair-value measurement of certain financial instruments during periods of market turmoil resulted in inaccurate valuations that bore little relation to the instruments' real value, thereby impacting earnings recognition. This raised questions about the reliability of the input data, both those observable on the market and those derived from models. The conclusion was that, in future, fair value measurement and its recognition in the profit and loss account should be confined to instruments that can be measured with sufficiently reliable data.

Accounting principles that reflect business models

It is now widely agreed that priority should be given to the business model of the institution rather than to the characteristics of the instrument. This means that when the same types of instruments are held for different purposes, either to be sold quickly or be held to maturity, it must be possible to measure them in a way that best reflects the purpose. If they are held for trading, fair value measurement is appropriate but if they are held for an extended period, then the amortised cost method should be used.

Provisioning earlier in the cycle

The risk premium inherent in distributing financial instruments is intended to cover the risk of future losses, even though these have not materialised when an instrument such as a bank loan is put in place. It has been suggested that, to reflect this risk, provisions equivalent to the risk premium ought to be set aside gradually once the instrument has been put in place and throughout its life, without waiting for a payment default. However, provisioning over the life of the instrument will affect the recognition of interest income in the early stages when the instrument is put in place.

No arbitrary rules

Accounting entries must reflect the economic substance of transactions and the way that instruments are managed. This includes any changes to the management method that may occur during the life of the entity. An entity must be able to sell instruments it originally intended to hold until maturity or, on the contrary, to keep instruments it initially wanted to trade, without being prevented from doing so or being penalised, provided the transactions involved are totally transparent.

In consequence, the Basel Committee believes that reclassifications from one category to another (e.g. fair value to amortised cost) should be allowed in rare circumstances.

3 http://www.bis.org/publ/bcbs161.pdf?noframes=1. *See Box 11.*

The main changes likely to be made to accounting regulations include:

• raising provisions earlier in the cycle. Rather than provisions being recognised when the risk of loss has materialised, as is the case at present, there is currently a move towards a forward-looking countercyclical system whereby they would be recognised gradually as soon as financial instruments are issued (see Box 10). These provisions would be based on historical loss data for the financial institution in question;

• applying fair value on the basis of recommendations from an IASB expert panel, so that the uncertainty associated with fair value measurement is reflected in accounting information. (Fair value can be derived directly from observable market data or indirectly from statistical models);

• simplifying the classification of financial instruments by dividing them into two main categories, instead of five at present. The first category consists of instruments measured at fair value, with valuation changes being recognised either in the income statement or on the balance sheet. The second category, consisting of instruments measured at amortised cost, naturally corresponds to banks' traditional lending business;

• overhauling the rules for consolidating (or deconsolidating) financial assets and liabilities, with control as the main criterion. This would have an impact on securitisation, and financial reporting would need to be enhanced;

• harmonising accounting standards at global level to avoid competitive distortions between banks and make financial statements easier to compare. The IASB and FASB have reiterated their intention of achieving a single set of accounting standards by 2011, a point also raised in the Pittsburgh G20 Leaders' Statement.

The IASB adopted and published the new IFRS on financial instrument classification on 12 November 2009. The other IFRS are due to be adopted in the course of 2010, and implementation will be staggered so as to give credit institutions time to reconfigure their information systems.

Box 10 Provisioning and procyclicality

The crisis revealed shortcomings in the accounting rules applied by financial institutions. Now, more than one year later, a consensus seems to be taking shape on the issue of forward looking provisioning, aimed at mitigating the procyclical effects of accounting rules.

Principle

Raise provisions by charging them against income earned at the top of the cycle and then use them when economic conditions deteriorate *in order to cushion the impact of losses on the income statement. Another advantage of this system is that it helps curb excessive increases in profits during an economic expansion, thereby limiting over-generous dividend payouts.*

How it works

Two approaches are under discussion:

• discounted expected cash flows

This approach consists in calculating an effective interest rate for a loan portfolio, i.e. the rate that gives the net book value of the portfolio by discounting future cash flows that are:
– determined on the basis of the contracted rate at which the loans were negotiated; and
– adjusted for expected losses, computed from the institution's historical data for similar loans.

Cash flows calculated with this method are lower than those obtained using the nominal rate alone. Interest is recognised using an effective interest rate that is lower than the contracted rate. This makes it possible to set aside provisions for the difference between the two values and to build up a "reserve" that can be drawn on if the cycle turns down.

• the Spanish model for dynamic provisioning

The Spanish approach consists in calculating the amount to be set aside as provisions during an economic expansion in order to offset payment defaults during a slowdown. Two key assumptions have to be made:

– loans are categorised by risk class;

– two indicators are determined to provide an historical record of losses and provisions: one indicator reflects the losses inherent in an increase in outstanding loans; the other corresponds to the average long-run level of provisions.

During an expansion the level of provisions tends to be underestimated relative to the historical average.

During a recession, however, outstanding loans tend to contract and specific provisions to rise.

The aim of the system is to introduce a dynamic element that plays a countercyclical role by stepping up the pace of provisioning during expansions and lessening it during slowdowns.

In the medium term, reform microprudential regulation…

Responding to the recommendations of the G20 heads of state and government (especially after the April 2009 London summit) and of the Financial Stability Board, the Basel Committee on Banking Supervision launched a set of reforms to improve the regulation, supervision and risk management framework of the banking sector. The reforms seek to make the industry more resilient to future shocks and curb procyclical financial behaviors. The Committee undertook to make concrete proposals on all the measures outlined below by the end of 2009.[4] Impact studies will be carried out in 2010 with a view to calibrating the new regulatory requirements, a process that should be completed by year's end. The requirements will be implemented gradually, depending on what happens in both the financial sector and the real economy, because adopting them too quickly might derail the recovery. A deadline of end-2012 was mooted at the G20 Pittsburgh summit in September 2009.

1| NEW CAPITAL REQUIREMENTS

The aim of the ongoing reforms is to strengthen several aspects of the regulatory framework for bank capital. This entails raising the transparency, quality and consistency of capital, strengthening the risk coverage of the capital framework, and introducing a leverage ratio. Discussions are also underway on implementing countercyclical capital buffers (see *infra*. "… and introduce macroprudential regulation").

1|1 Definition of capital

The crisis has shown the need to improve the quality, transparency and international harmonisation of capital and also to strengthen the overall level of capital available at financial institutions so as to make them more resilient and restore market confidence. As the crisis unfolded, some complex or hybrid instruments included in the definition of capital proved unable to absorb losses. Also, because capital is so diverse and complex, it is hard for supervisors and markets to assess the true solvency level of banks. International comparisons, too, are difficult for the same reason.

The Basel Committee proposes that (i) Tier 1 capital should be composed mainly of common shares, reserves and retained earnings, (ii) deductions from capital and prudential filters should be harmonised, and (iii) these adjustments should no longer be recorded in total capital but in core Tier 1 capital.

4 *See the press release of the Base Committee on Banking Supervision, December 17th 2009.*

For mutual and cooperative banks, which are not permitted to issue common stock, the committee plans to draw up a list of criteria concerning the extent to which their capital is able to absorb losses. The aim is to bring in new requirements that apply to the economic substance and loss-absorbing capability of capital instruments, not to their legal form.

1|2 Enhanced risk coverage (market risks)

The Committee recently tightened risk management rules in connection with the three Basel II pillars. From end-2010, higher capital charges will apply to capital markets activities, securitisation and re-securitisation, and off-balance sheet exposures. In particular the treatment of securitisations and re-securitisations on the trading book will be brought into line with the method used for the banking book in order to avoid regulatory arbitrage.

A stressed value-at-risk measure will also be introduced for the trading book in an effort to limit the cyclical nature of capital standards. The disclosure requirements applicable to these activities will also be strengthened under Pillar 3.

Alongside these measures aimed at the trading book, a fundamental review of market risk has also been set in train. The first step is to take stock of banks' capital market activities and the models they use to measure the associated risk in order to identify any shortcomings. The next step is to draw up a new prudential framework that provides a clearer definition of the boundary between the trading and banking books and that reassesses regulatory capital requirements in line with risk exposures in the trading book.

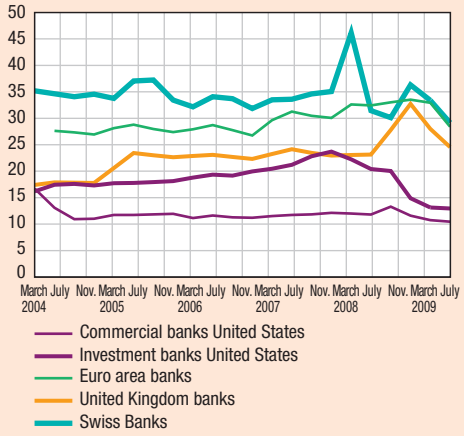
1|3 Introduction of a leverage ratio

The leverage ratio will supplement the existing capital requirements, based on risk-weighted assets, by providing a simple way of measuring bank leverage, i.e. the ratio of assets to shareholders' equity. Discussions are underway to determine the degree of constraint for this new measure. For the time being, many difficulties have to be overcome before a simple, harmonised and effective ratio can be crafted. The aim, as described in a press release following a meeting of the Group of Central Bank Governors and Heads of Supervision on 6 September 2009, is to "introduce a leverage ratio as a supplementary measure to the Basel II risk-based framework with a view to migrating to a Pillar 1 treatment based on appropriate review and calibration".

Here again, bringing in the new measure will entail a major effort in terms of calibration,

Bank leverage

Total assets/shareholders' equity



Note: Netting discrepancies due to the use of different accounting standards in the United States and the euro area are not taken into account.
Source: Bloomberg.

focused mainly on how to incorporate off-balance sheet items and deal with derivatives and securitisation. On the first point, experience with the leverage ratio currently used in the United States has shown that the real level of bank leverage cannot be assessed unless off-balance sheet items are factored in. More importantly, the US ratio may have led to cases of regulatory arbitrage by encouraging banks to grow their off-balance sheet activities. This raises the question of a trade-off between the simplicity of the ratio and the most comprehensive possible evaluation of exposure.

The leverage ratio will also have to take into account the differences between accounting standards, notably in terms of netting, in order to allow for international comparisons and make sure that certain jurisdictions are not put at a disadvantage.

2| NEW LIQUIDITY REQUIREMENTS

The crisis has shown that the solvency mechanism needs to be rounded out by measures on liquidity, applicable both to individual institutions and to the system as a whole. However, because of its complexity, liquidity is one of the areas in which much work has still to be done.

Bank's liquidity risk exposures are complicated to grasp. There are three main aspects that vary from one institution to another and depend on their business models: maturity mismatches between assets and liabilities, the liquidity characteristics of instruments recorded as assets, and the type of funding (wholesale or deposits).

The liquidity standards currently applicable to banks are likely to evolve following the work of the efforts of the Basel Committee, with the introduction of common rules and requirements on funding liquidity. These could include both a minimum ratio of liquid assets to cope with periods of market stress and a structural ratio that measures long-term liquidity.[5]

However, several issues have still to be resolved, notably the level at which the standards should be applied (consolidated or solo), the composition of the stock of liquid assets.

5 *Extract from the Basel Committee press release dated 6 September 2009: "Comprehensive response to the global banking crisis: Introduce a minimum global standard for funding liquidity that includes a stressed liquidity coverage ratio requirement, underpinned by a longer-term structural liquidity ratio".*

Press release of Central Bank Governors and Heads of Supervision
Basel Committee on Banking Supervision – 6 September 2009

Comprehensive response to the global banking crisis

The Group of Central Bank Governors and Heads of Supervision, the oversight body of the Basel Committee on Banking Supervision, met on 6 September to review a comprehensive set of measures to strengthen the regulation, supervision and risk management of the banking sector. These measures will substantially reduce the probability and severity of economic and financial stress.

President Jean-Claude Trichet, who chairs the Group, noted that «the agreements reached today among 27 major countries of the world are essential as they set the new standards for banking regulation and supervision at the global level».

Mr Nout Wellink, Chairman of the Basel Committee and President of the Netherlands Bank, stated that «central banks and supervisors have responded to the crisis by strengthening microprudential regulation, in particular the Basel II framework. We are working toward the introduction of a macroprudential overlay which includes a countercyclical capital buffer, as well as practical steps to address the risks arising from systemic, interconnected banks».

The Central Bank Governors and Heads of Supervision reached agreement on the following key measures to strengthen the regulation of the banking sector:

• *Raise the quality, consistency and transparency of the Tier 1 capital base. The predominant form of Tier 1 capital must be common shares and retained earnings. Appropriate principles will be developed for non-joint stock companies to ensure they hold comparable levels of high quality Tier 1 capital. Moreover, deductions and prudential filters will be harmonised internationally and generally applied at the level of common equity or its equivalent in the case of non-joint stock companies. Finally, all components of the capital base will be fully disclosed.*

• *Introduce a leverage ratio as a supplementary measure to the Basel II risk-based framework with a view to migrating to a Pillar 1 treatment based on appropriate review and calibration. To ensure comparability, the details of the leverage ratio will be harmonised internationally, fully adjusting for differences in accounting.*

• *Introduce a minimum global standard for funding liquidity that includes a stressed liquidity coverage ratio requirement, underpinned by a longer-term structural liquidity ratio.*

• *Introduce a framework for countercyclical capital buffers above the minimum requirement. The framework will include capital conservation measures such as constraints on capital distributions. The Basel Committee will review an appropriate set of indicators, such as earnings and credit-based variables,*

as a way to condition the build up and release of capital buffers. In addition, the Committee will promote more forward-looking provisions based on expected losses.

• Issue recommendations to reduce the systemic risk associated with the resolution of cross-border banks.

The Committee will also assess the need for a capital surcharge to mitigate the risk of systemic banks.

The Basel Committee will issue concrete proposals on these measures by the end of this year. It will carry out an impact assessment at the beginning of next year, with calibration of the new requirements to be completed by end-2010. Appropriate implementation standards will be developed to ensure a phase-in of these new measures that does not impede the recovery of the real economy. Government injections will be grandfathered.

Mr Wellink emphasised that «these measures will result over time in higher capital and liquidity requirements and less leverage in the banking system, less procyclicality, greater banking sector resilience to stress and strong incentives to ensure that compensation practices are properly aligned with long-term performance and prudent risk-taking».

The Group of Governors and Heads of Supervision endorsed the following principles to guide supervisors in the transition to a higher level and quality of capital in the banking system:

• Building on the framework for countercyclical capital buffers, supervisors should require banks to strengthen their capital base through a combination of capital conservation measures, including actions to limit excessive dividend payments, share buybacks and compensation.

• Compensation should be aligned with prudent risk-taking and long-term, sustainable performance, building on the Financial Stability Board (FSB) sound compensation principles.

• Banks will be required to move expeditiously to raise the level and quality of capital to the new standards, but in a manner that promotes stability of national banking systems and the broader economy.

Supervisors will ensure that the capital plans for the banks in their jurisdiction are consistent with these principles.

…and introduce macroprudential regulation

Several factors that emerged in the course of the crisis have created a general consensus on the need for a macroprudential approach to regulation and supervision. The crisis has shown that microprudential regulation alone is an inadequate response in terms of the financial system as a whole. This is because the sum of rational behaviors –prompted in particular by prudential rules– does not necessarily produce an optimal result at global level and also because rule harmonisation can engender herd behavior.

"We must complement microsupervision with macrofinancial supervision, taking into account the systemic importance and interconnectedness of institutions, markets, instruments and the cumulative risks and dynamics which they create. System-wide phenomena that went unchecked, such as the aggregate rise in leverage and maturity transformation, must no longer escape our vigilance.

"All countries are moving in that direction. In Europe, following the Larosière Report, we are creating a European Systemic Risk Board. In the United States, it has been proposed that the Federal Reserve will become the future systemic supervisor. In France, the Government has decided a reform where insurance and banking supervision will be merged under the umbrella of a "systemic" college under the auspices of the Banque de France. Clearly, the move towards macrofinancial supervision means that Central Banks will have to assume additional responsibilities. History tells us that the missions of Central Banks have taken major turns following financial crises."[6]

There are two aspects to macroprudential supervision, one relating to the risk of procyclicality in the financial system vis-à-vis the real economy, the other to the monitoring of systemic risk.

6 *Publication of the Banque de France's Financial Stability Review: "The future of financial regulation". Remarks by Christian Noyer, Banque de France Governor, London, 4 September 2009.*

1| THE OBJECTIVES OF MICRO AND MACROPRUDENTIAL SUPERVISION ARE DIFFERENT...

Microsupervision's main objective is to prevent the failure of individual institutions in order to protect depositors. This means ensuring that banks are resilient to the shocks that may affect them. However, while many supervisors have been involved in performing stress testing in their banking system for a long time, the crisis has suggested that this approach to supervision alone has not been able to limit the build-up of risks in the system. At a technical level, this is mainly because microprudential supervision did not take into account externalities and that macroprudential supervision was not yet in place. Indeed, ensuring a firm's solvency is a different task from limiting the build-up of risks in the system.

And this is precisely what macroprudential supervision tries to achieve. Its goal is not to protect individual firms but to safeguard the financial system as a whole. Macroprudential supervision should also look at the interactions between the real economy and the financial sector. Past and recent experiences have shown that various forces at play within financial systems can make them procyclical: they can exacerbate the cycle with negative implications for the real economy. Incentives shaped by accounting, compensation and prudential regulation frameworks, ill-calibrated risk management tools and regulatory arbitrage practices have all contributed to increase leverage and transformation risks in the system.

2| ...BUT THEY CAN BE COMPLEMENTARY TOO

Despite their different objectives, micro and macroprudential approaches are complementary. It would be overly simplistic to tackle them separately. The macroprudential supervision framework relies in part on the adaptation of microprudential tools. Much can be achieved by calibrating microprudential tools to take into account some of the externalities and the interactions within a financial system. This is particularly the case for the capture and prevention of systemic risk: systemic risk is the result of liquidity risk, leverage, compounded by financial innovation and high transformation risks.

The G20 has given strong momentum to reassessing a number of aspects of the Basel II framework, which only concerns banks. Efforts are being devoted to introducing a new liquidity regulatory regime, creating countercyclical buffers and implementing a leverage constraint. The implementation of new macroprudential tools will foster better risk mitigation and contribute to a safer financial system, which in turn should facilitate the conduct of microprudential supervision.

Macroprudential supervision should be instrumental in identifying bubbles more accurately. While not a macroprudential tool per se, central counterparties for derivatives products will be key in enhancing the macrofinancial environment in which financial firms operate. Moreover, to better mitigate systemic risk a number of improvements or changes may be made: better managing risks (systemic liquidity risk, credit risk, counterparty risk, market risk and solvency risk), explicitly including into stress testing frameworks the correlation between risk factors and the exposure of banking and non-banking institutions) and mitigating the cyclicality and possibly, procyclicality, of certain current prudential and accounting standards (notably through the creation of countercyclical capital buffers to reduce the procyclicality of capital requirements; forward looking provisioning; and adjustments to existing fair value accounting rules).

3| THE COMBINATION OF THESE APPROACHES IS MOST EFFICIENT WHEN PLACED UNDER THE SAME ROOF: THE CENTRAL BANK

The complementarities and interactions between both approaches raise obvious governance issues: who (which institution) should be in charge of what (micro- or macroprudential surveillance)?

The crisis has proved the efficiency of organisations where the central bank and the banking supervisor are hosted under the same roof. Indeed, on the one hand, supervisors have a deep knowledge of the risk profile of banks, based on the assessment of prudential information. On the other hand, central banks are better placed to identify macroeconomic or sector-specific vulnerabilities and interactions between the financial sphere and the real economy. The complementarities between the two visions are thus maximised when the exchange of information between the supervisor and the central bank is easy and efficient.

Parallel to the question of "who" should be in charge of what, there is the issue of "how". In many matters of public policy, there is a choice between rules and discretion. As far as microsupervision is concerned, the choice is a mix of uniform, binding rules, i.e. Pillar 1, and needed discretion to account for firm or country circumstances. At this stage, finding a proper balance when it comes to macroprudential policies is still a matter of discussion.

4| RULE-BASED VERSUS A DISCRETIONARY APPROACH

From both of the above standpoints, implementing macroprudential supervision involves a choice between rules and discretion.

> *Excerpt from: "Bubbles and macroprudential supervision", remarks by* ***Jean-Pierre Landau****, Banque de France Deputy Governor, 28 January 2009*

"First, (the rule based approach), macrosupervision can be built through automatic stabilizers which would constrain institutions in their behavior, regardless of their own individual situations. Examples would include countercyclical capital requirements as well as dynamic provisioning. As I will develop later, stabilizers should be constructed so as to act directly on the incentive to take risk and the rewards provided by risk taking.

A second approach would consist on discretionary, "top-down" interventions from macro authorities. Prudential authorities would step in and impose (or relax) constraints whenever they come to the conclusion that dangerous imbalances are building up (or unwinding).

We probably cannot dispense of this second approach. The difficulty to date cycles makes it dangerous to rely purely on automatic mechanisms, which cannot be precisely calibrated. Financial cycles, in particular, are driven by changes in risk appetite which are impossible to predict. Actually, one essential objective of macroprudential supervision may be to "regulate" (not in the legal sense, but economically) the aggregate level of risk appetite inside the financial system. This unavoidably involves some degree of discretionary judgement and intervention."

5| REDUCING PROCYCLICALITY

*Excerpt from: "Procyclicality: what it means and what could be done", Speech by **Jean-Pierre Landau**, Banque de France Governor – Madrid, 4 May 2009*

"Strictly speaking, procyclicality refers to the tendency of financial variables to fluctuate around a trend during the economic cycle. Increased procyclicality thus simply means fluctuations with broader amplitude […].

A broader definition of procyclicality would thus encompass three components, which cannot easily be distinguished in real life: (1) fluctuations around the trend (2) changes in the trend itself and (3) possible cumulative deviations from equilibrium value. This points to the policy challenges regulators face. They have to try and identify when pure cyclical fluctuations morph into something different: either a change in the trend itself or the start of a cumulative process.

A good operational approach to procyclicality would look at all amplification mechanisms which provoke (or allow) the financial system to deviate durably or permanently from its predetermined path so that the trend itself may be affected in the short or medium run."

Regarding capital, for example, "procyclicality" is when capital standards prompt banks to increase risk exposure during a cycle upswing by expanding their balance sheet and to curtail lending volumes during a recession. In both cases, the behavior is excessive. There is broad agreement on the need to curb this tendency by introducing countercyclical "capital buffers" that allow banks to accumulate capital during good times and to use it during crisis periods. Although the principle has been accepted, the practicalities have yet to be worked out. The Basel Committee is addressing the issue, however, and expects to devise a system for building capital buffers at the top of the cycle and drawing on them during a downswing. A target ratio could be set for this purpose. Until the target has been reached, financial institutions would be subject to a number of constraints, particularly in terms of capital stability.

6| REDUCING SYSTEMIC RISK

Regulators are now also seeking to identify and monitor systemic risk.

"I would like to point out that the G20 Action Plan imposes a requirement for all stakeholders concerned with financial stability: how to better assess the risks facing the financial system as a whole? On this point, you must admit that systemic risk is the risk that we need to take better account of. We have not been able to identify it, control it, or capture it in prudential terms. In many respects, systemic risk is the result of liquidity risk, leverage, compounded by financial innovation and high transformation risks. These factors are not easy to measure at the level of individual banks. They are even less so at the level of the financial system as a whole. This is nevertheless the challenge we have to face today."[7]

7 *From "Economic and financial crisis: the post-G20 outlook", Speech by Christian Noyer, Banque de France Governor – Hong Kong, 11 June 2009.*

Box 11 Proposals to define and regulate systemic institutions and markets

The International Monetary Fund, the Financial Stability Board and the Bank for International Settlements have jointly developed guidance for national authorities to assess the systemic importance of financial institutions, markets and instruments.

The document suggests using three criteria to characterise institutions, markets and instruments: (i) size (assessed using different measures), (ii) substitutability and (iii) interconnectedness. It should be noted that the legal form must not be considered a criterion, since the crisis has illustrated that non-bank institutions such as AIG, Freddie Mac or Fannie Mae could destabilise the system as a whole.

In this context, the Financial Stability Board has launched a working programme on the subject (too-big-to-fail project), whose aim is to coordinate the work carried out by the various technical groups. In practice, the Financial Stability Board wishes to (i) draw up a list of options available for tackling the problem of systemic institutions and (ii) discuss the costs and benefits of each option by September 2010.

Its work focused on three areas:

- *reducing the possibility and impact of a default. This covers the different approaches of supervision and regulation to be implemented to deal with systemically important institutions;*

- *improving the capacity to handle failures of institutions. In this respect, it must examine preparations for a possible crisis situation, the establishment of contingency plans, and cooperation and information exchanges between competent authorities;*

- *reinforcing the main financial infrastructures and markets. This will involve improving infrastructures and measures to reduce the interconnectedness of entities, counterparty risk and increasing the transparency on OTC markets.*

Identifying and preventing systemic risk involves ensuring appropriate supervision of institutions that could destabilise the system as a whole while introducing measures targeted at specific risks, such as leverage and systemic liquidity risk.

The crisis has shown that regulation and supervision must extend to every institution that could affect financial stability. There is no precise definition of what constitutes a systemically important entity, but the basic criteria include its interconnection with the rest of the financial system, its size and relative importance, both domestically and worldwide, its importance in the financial infrastructures of its home country, and its financial leverage.

Broadening the scope of regulation and supervision goes hand in hand with the issue of reserving special treatment for systemically important institutions in order to mitigate the risk of moral hazard. To all intents and purposes, closer supervision would be the quid pro quo for the assurance of a government bailout in the event of difficulty. One new consideration is that the cost of regulation should be linked not to the risks assumed by the institution itself but to the risks that its activities impose on other market participants and, more broadly, on the financial system as a whole.

Several measures are now under consideration, all of which entail implementation problems. For instance, matters such as identifying systemically important institutions without precise guidelines is an issue in itself.

Measures for coping with the risks posed by the activities of systemically important institutions include:

• capital or liquidity requirements growing faster with the systemic importance of the institution;

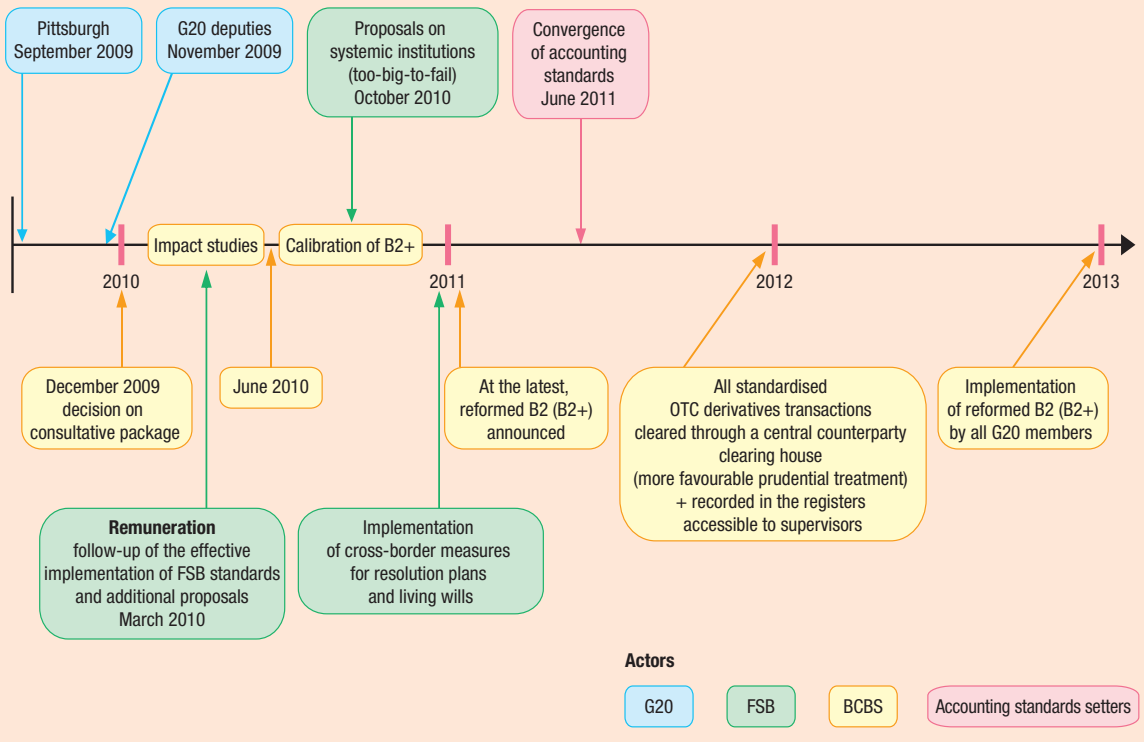
• a system of insurance to guarantee that systemically important institutions have access to liquidity or additional capital;

• differentiated supervision based on Pillar 2 of Basel II, but without new, specific rules;

• separation between investment banking and retail banking activities. In this respect, it should be noted that business diversification (i.e. the universal banking model) proved to be a source of resilience during the crisis.

Another aspect of regulating systemically important institutions is "resolution" procedures if they get into difficulty. The collapse of Lehman Brothers showed that some institutions are simply too complex to liquidate. One possible solution would be for institutions to draw up a "living will" that would not only make them easier to wind up if they become insolvent but that would prompt them to streamline their structure before problems arise. Another possibility would be to encourage institutions to downscale.

International financial regulation Reform
Planned schedule



Credit default swaps and market infrastructures

Because of the crisis, enhancing the security of the credit default swap (CDS) over-the-counter (OTC) market has become an urgent imperative. Since September 2008 the number of defaults has soared and market participants have become more risk averse. This is significant insofar as CDS present a double default risk involving both the underlying entity and the protection seller. The steep increase in credit risk (on the CDS underlier) and counterparty risk (in particular on the firm that sells protection) has prompted participants to reduce exposure to this market, for example by taking part in compression cycles, which eliminate redundant contracts.[8] As a result, the CDS market shrank from USD 57.9 trillion at end-December 2007 to USD 36 trillion at end-June 2009 (BIS figures in notional terms).

To further reduce the risks on the huge amounts outstanding in CDS, the financial industry is driving an initiative to standardise these contracts. And, under the impetus of the authorities, central counterparty clearing is now being used in the CDS market.

1| INDUSTRY EFFORTS TO STANDARDISE CDS CONTRACTS

Under the umbrella of the International Securities and Derivatives Association (ISDA) and at the urging of the major dealers, two new sets of contracts for CDS came into force in 2009: the Big Bang Protocol for US reference entities in April and the Small Bang Protocol for European reference entities in July.

The new contracts provide a fuller description of credit events, which can consist of bankruptcy, payment default, repudiation/moratorium (on a sovereign CDS) or, in the case of a European contract, restructuring of the underlying debt.

Furthermore, in an effort to avoid legal disputes, so-called Determination Committees have been set up to decide whether a credit event has actually occurred.

The new contracts also feature standard coupons,[9] a new development that enhances fungibility and therefore has a positive impact on market liquidity. Coupon standardisation has encouraged the development of compression cycles and central counterparty clearing solutions for CDS.

8 *Compression cycles are conducted by TriOptima and Creditex. Contracts on gross positions are terminated, or "torn up", and new contracts are set up on net positions. For example, A sells a EUR 10 million contract to B, then B sells to C, and C sells to D, giving a gross exposure of EUR 30 million. The net exposure between A and D would be EUR 10 million. Thus the three contracts (A-B, B-C, C-D) can be replaced by a single EUR 10 million contract between A and D if all four parties agree.*

9 *Standard coupons have been set at 100 and 500 basis points for US contracts and at 25, 100, 500 and 1000 basis points for European contracts. Like the market standards adopted for indices, the new contracts trade at fixed coupons rather than the market value of the spread at the contract origination date. An up-front premium is paid to offset the difference.*

2| CENTRAL COUNTERPARTY CLEARING FOR CDS

The debate about the usefulness of developing central counterparty (CCP) clearing for over-the-counter derivatives[10] has been going on for some time. But the difficulties that arose in the CDS market during the financial crisis prompted the public authorities, notably at the G20 summits[11] in London and Pittsburgh (April and September 2009), to encourage the extension of this mechanism. The market responded positively to these initiatives and three CCP clearing houses are already active in the CDS segment (ICE Trust, ICE Europe, and Eurex Credit Clear). LCH. Clearnet SA is working on a solution that should be finalised in December 2009 (see summary table of the different clearing house projects).

CCP clearing is essential for managing counterparty and market risks. Acting as a clearing house, the CCP can lower the overall risk on a set of market positions by calculating net positions in fungible contracts. As central counterparty, the CCP functions as the buyer for all sellers, and vice versa, thus ensuring secure completion of members' transactions. The CCP plays a critical role if a member is in default, taking the member's place and discharging its obligations to the counterparties concerned. In the event of a default in the CDS segment, the CCP would continue paying premiums to the protection seller and shielding the buyer from the underlying credit risk until the contract has been liquidated.

3| THE FUTURE OF REGULATION

The ongoing drive to standardise products that had previously been traded bilaterally, such as CDS, is making a key contribution to market security. In line with the goal set at the G20 Pittsburgh summit, the most highly standardised contracts are due to be traded on exchanges or electronic platforms and cleared by CCPs by end-2012 at the latest. These commitments are expected to be transposed into legislation over the coming months in the United States and Europe, where work on new legislation concerning financial markets and market infrastructure has started.[12] For the time being, however, only CDS index products and the most liquid single-name CDS (chiefly contracts on reference entities that underlie the indices) have been standardised. Further efforts are therefore needed so that CCP solutions can be extended to all CDS categories. Furthermore, protecting the CDS market by developing CCP clearing will work only if the CCPs' risk management systems are properly geared to the contracts' specific risk profiles. On this issue, the CPSS IOSCO[13] Recommendations for Central Counterparties are being updated to take greater account of OTC products such as CDS.

10 See the report of the Committee on Payment and Settlement Systems of the BIS, "New developments in clearing and settlement arrangement for OTC derivatives", March 2007.

11 G20 Leaders' Statement, 2 April 2009: "We will promote the standardisation and resilience of credit derivatives markets, in particular through the establishment of central clearing counterparties subject to effective regulation and supervision. We call on the industry to develop an action plan on standardisation by autumn 2009."
G20 Leaders' Statement, 24 - 25 September 2009: "All standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements. We ask the FSB and its relevant members to assess regularly implementation and whether it is sufficient to improve transparency in the derivatives markets, mitigate systemic risk, and protect against market abuse."

12 MiFID 2 – the Markets in Financial Instruments Directive and EMIL – European Market Infrastructure Legislation.

13 These recommendations were drawn up by the Committee on Payment and Settlement Systems and the International Organisation of Securities Commission. Published in 2004, they lay down common standards that allow regulatory authorities, central banks and securities commissions, as well as the International Monetary Fund and the World Bank, to evaluate different systems.

One key aspect of the risk management framework is to ensure that CCPs have access to liquidity. A CCP must have sufficient resources to cope with a sudden, sharp increase in funding requirements if one of its members defaults; it must not be dependent on bank refinancing, which can dry up in the event of a financial crisis or money market stress. CCPs therefore need permanent access to central bank liquidity in the trading currency, meaning that the central bank would have **direct oversight**[14] on these infrastructures. Given that euro-denominated CDS account for nearly 40% of the total, at least one clearing house that handles these contracts must have access to central bank liquidity in euro. It must therefore be supervised directly by the Eurosystem and be based in the euro area, in accordance with the Eurosystem's unwavering policy on location and with the decisions taken by the Governing Council on 18 December 2008 and 16 July 2009.[15]

Current projects for CCP clearing of credit derivatives
Data at 28 January 2010

	Promoters	Products	Business value and volume
ICE/ TCC : ICE Trust  Went live on 6 March 2009 for indices on 21 December 2009 for single names	- Intercontinental Exchange (ICE): Atlanta-based derivatives exchange - The Clearing Corporation (TCC): Chicago-based clearinghouse	- US indices (CDX) - US single names	Index clearing since inception: - Face value: USD 3,564 billion - Volume: 41,450 trades Single-name clearing since inception: - Face value: USD 10.3 billion - Volume: 1,205 trades
CME/ Citadel : CMDX  Went live on 9 March 2009	- Chicago Mercantile Exchange (CME): derivatives exchange and clearinghouse - Citadel (US hedge fund)	- US indices (CDX) at inception	Data unavailable
ICE Europe  Went live on 29 July 2009 for indices on 14 December 2009 for single names	- ICE	- European indices (iTraxx) at inception - European single names	Index clearing since inception: - Face value: USD 1,024.2 billion - Volume: 20,760 trades Single-name clearing since inception: - Face value: USD 32.2 billion - Volume: 6,750 trades
EUREX Credit Clear  Went live on 30 July 2009	- Eurex Clearing: joint subsidiary of Deutsche Börse and Swiss Exchange	- European indices (iTraxx) at inception - Single-name components of indices	Index clearing since inception: - Face value: EUR 0.085 billion - Volume: 3 trades Single-name clearing since inception: - Face value: EUR 0.010 billion - Volume: 2 trades (RWE AG)
LCH.Clearnet SA  Functional launch on 14 December 2009 commercial launch scheduled for end-March 2010	LCH.Clearnet SA	- European indices (iTraxx) at inception	

14 See ECB legal opinion published on 7 August 2009, available at http://www.ecb.int/ecb/legal/pdf/en_con_2009_66_f_sign.pdf
Paragraphs §3.2.3 and §3.3.1 highlight the links between geographical location, oversight and access to central bank liquidity.
15 Available on the ECB website http://www.ecb.int/press/govcdec/otherdec/2008/html/gc081219.en.html
http://www.ecb.int/press/govcdec/otherdec/2009/html/gc090717.en.html

A weakened financial sector reviews its economic models

1| INTERNATIONAL BANKS' FINANCIAL POSITION IS IMPROVING...

1|1 A return to profitability

After falling to –3.9% in 2008, average profitability[1] of large European and US banks rallied sharply in the first half of 2009 to 7.7%. This nonetheless remains substantially below the long-term average profitability of 13.6%.

Moreover, financial performance varies widely among the banks in the sample:[2] while some banks reported negative or zero return on equity (RoE) in 2009, others achieved a RoE of over 10%. The investment banks in the sample[3] report an average long-term profitability (1997-2006) of 14.8%, surpassing the 13.1% recorded by universal banks. However, investment banks' performance is more volatile and more vulnerable to crises (2001-2002 and 2007-2008). In 2008, average profitability of investment banks fell to –14.2%, while that one of the large universal banks[4] remained moderately positive at 0.3%.

1|2 Investment banking, the engine driving economic activity

In 2009, income from corporate and investment banks was significantly boosted by a number of factors: an increase in fees due to a significant wave of bond and equity capital issues, a rise in profit margins generated by waning competition between banks (as a result of bank failures or sector consolidation), moderate volatility levels, historically low refinancing rates rates and the steepening of the yield curve. The record level of income reported by corporate and investment banks in the first half of 2009 brought back their contribution to total bank income to pre-crisis levels.

1 *Profitability is measured using return on equity (RoE): the ratio of a bank's net income to its total equity.*
2 *The sample used to calculate RoE was made up of 17 large European and US banks: HSBC, Crédit agricole SA, Société générale, BNP Paribas, Santander, Unicredit, Credit suisse, UBS, Barclays, RBS, Deutsche Bank, JP Morgan, Citigroup, Bank of America, Wells Fargo, Morgan Stanley and Goldman Sachs.*
3 *Banks considered as investment banks are those whose financial and investment business has accounted for over 50% of their average income over the last three years (Morgan Stanley, Goldman Sachs, Credit suisse, UBS and Deutsche Bank).*
4 *Sample of 12 banks: HSBC, CASA, Société générale, BNP Paribas, Santander, Unicredit, Barclays, RBS, JP Morgan, Citigroup, Bank of America and Wells Fargo.*

1|3 The proportion of non-recurring items is shrinking

Earnings disclosed by banks at the end of 2008 and early 2009 were difficult to interpret due to the presence of non-recurring income. The banks had previously benefited from changes in accounting rules (amendment of IAS 39 in Europe and FAS 157 and FAS 115 in the United States) allowing them to reclassify certain assets in their accounting statements and change valuation methods. They had also benefited from the positive effect of the widening credit spreads[5] on their own debt. Lastly, some banks earned one-off capital gains by selling off equity holdings. These temporary and distorting effects subsequently receded in some measure.

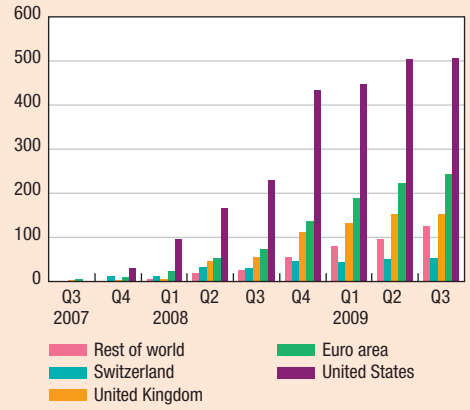
1|4 Increased solvency

Government recapitalisation of banks, together with more prudent capital management policies, led to an improvement in Tier 1 solvency ratios in 2008, which continued in 2009.

• The US government conducted "stress tests" to reveal any weaknesses that needed to be addressed. Significant amounts of new capital were raised following the release of the results of these stress tests. Some 22 banks in Europe also underwent stress tests (See Box 12). These tests revealed that the aggregate Tier 1 ratio of these 22 systemic institutions would remain above internationally required levels, even in the event of a scenario of a growth of –5.2% in 2009 and –2.7% in 2010. Under these conditions, the expected losses of these 22 banks would amount to EUR 400 billion, which is very close, all things being equal, to IMF and ECB estimates.

Cumulative capital issues by geographical area

(USD billions)



Sources: Bloomberg, Banque de France – DSF calculations.

• From the third quarter of 2007 to the third quarter of 2009, the capital raised in the United States amounted to over USD 500 billion. USD 232 billion were raised in the euro area, USD 157 billion in the United Kingdom, USD 51 billion in Switzerland and USD 67 billion in Japan. In autumn 2009, the banks also raised capital without government assistance.

• Most European governments (with the exception of the United Kingdom) bought hybrid securities such as preferred shares. These securities are considered as equity capital for the purpose of calculating regulatory own-funds, and make it possible to reduce the risk of losses for the tax payer while providing dividends flows more attractive than ordinary shares. However, they do not carry all the rights associated with common stock, particularly voting rights. In the United States, the capital raised was mostly in the form of common stock; in addition, the preferred stock purchased by the United States could potentially increase in value because they offer the government

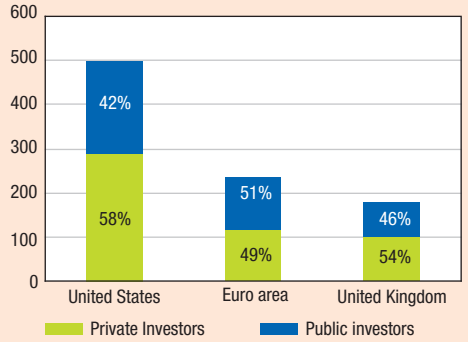
5 *Banks may record in their profit and loss account the profit (or loss) arising from the difference in the value of their debt at the date when it was contracted and its value at date t, which is dependent on market parameters. When market conditions and the bank's credit quality deteriorate (or improve), the cost of redeeming or possibly refinancing the debt decreases (or increases), and banks record a profit (or a loss) in their profit and loss account.*

a 10-year option to purchase common shares at a pre-determined conversion price ("warrants"). In the euro area, the European banks that were recapitalised by governments have stepped up repayment procedures since September 2009, thanks, in particular, to capital that may now be raised without government funding.

• US banks were able to raise significant amounts of capital by turning increasingly to private investors, who accounted for 58% of issues. The funds raised following the release of stress test results in the United States enabled ten major US banks to fully reimburse TARP[6] funds while maintaining high Tier 1 ratios. JP Morgan Chase is a case in point with a Tier 1 ratio of 9.7%. European banks, for their part, relied on public investors for over 51% of capital raised.

Breakdown of capital issues by type of investor and by area
Q3 2007 to Q3 2009, cumulated flows

(USD billions)

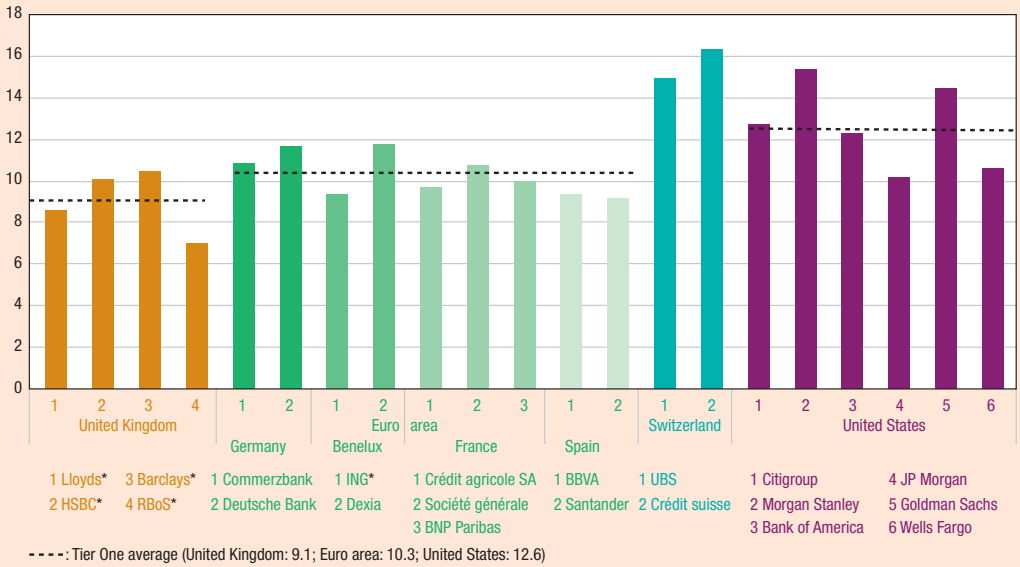


Source: Bank for International Settlements.

As a consequence of the capital issues, international banks' Tier 1 ratios have improved significantly: at the end of September 2009, they stood at an average of 9.1% in the United Kingdom, 10.3% in the euro area and 12.6% in the United States.

Tier 1 Ratio
on 30/09/2009, except (*) on 30/06/2009

(%)



Source: Bloomberg, bank's financial reports.

6 *Troubled Asset Relief Program.*

Box 12 Comparison of US and EU stress tests

US and European authorities carried out stress tests on banks in order to assess their capital needs under a stress scenario. In both cases, the outcomes of the tests were positive, particularly so for the European banks. Though not conducted jointly, both series of tests nevertheless employed similar methods:

• In the United States, the results, which were released in May 2009, underlined that the banks that underwent the tests fell short of USD 75 billion in capital, taking into account the plans for raising fresh capital that had already been announced by the banks in the first quarter of 2009 (asset sales, transformation of the capital structure in place for some banks, and additional provisions in the first quarter).

US supervisors conducted the tests on banks with assets over USD 100 billion, i.e. a total of 19 banks accounting for a little more than 60% of all assets of commercial banks operating in the United States. The tests were based on two types of economic scenarios: a baseline scenario representing the market consensus and a more "extreme", but not improbable, scenario (recession in 2009 with a growth rate of –3.3%, and zero growth in 2010; an unemployment rate of 8.9% in 2009 and 10.3% in 2010).

The tests then assessed losses over the next two years (2009 and 2010), provisions required at the end of 2010, funds available to absorb these losses and capital available in excess of certain regulatory capital target ratios. The ratios considered were firstly, a Tier 1 ratio required to reach at least 6% of risk-weighted assets, and secondly, a "tangible" capital ratio required to surpass 4% of risk-weighted assets.

Lastly, the US banks committed to make efforts to raise capital should the tests show a capital shortfall; in return, the government could step in to bolster these recapitalisation efforts. The banks were given up to 8 June 2009 to present their capital-raising strategies and up to November to implement them.

• In Europe, the stress tests –whose results were announced at the beginning of October 2009– found that the European banks did not need to raise additional capital. The maximum drawdown would be an aggregate loss of EUR 400 billion.

The European approach was decentralised under the aegis of the Committee of European Banking Supervisors – CEBS. Each national supervisor carried out simulations on the banking groups under its supervision using macroeconomic hypotheses defined by the ECB and the European Commission. Due to differences in Member States' situations, each country could use its own hypotheses on the credit cycle, or on banks' future performance. European supervisors measured the impact of a macroeconomic shock (with, according to the worst case scenario, euro area GDP drops by 5.2% in 2009 and by 2.7% in 2010; unemployment rate climbs to 10% in 2009 and 12.5% in 2010) on the level of the Tier 1 ratios of the 22 largest European banks accounting for 60% of EU bank assets.

In practice, the supervisors used mainly prudential data by applying distinct treatments to "banking book" exposures and "trading book" exposures. The stress tests were conducted with a two-year horizon and showed that even in the worst case scenario, no European bank would see its solvency ratio fall below 6%.

By showing that banks' capital needs were limited, or even nil, the stress tests on US and European banks paved the way for a pick up in the banking sector's credibility. However, in neither case can the stress tests be considered forecasts: in no way do they anticipate the banking sector's capital requirements in the coming years. Furthermore, they are based on an approach that is static and not dynamic, and are therefore merely a "snapshot" of the banks' solvency position.

2| ...BUT THE BANKS REMAIN UNDER PRESSURE

2|1 The highly volatile component of incomes

The rise in the income of the major banks in 2009 can be mainly attributed to corporate and investment banking activity, which was boosted by bullient business conditions: resurgent asset prices, spreads at high levels, a moderate level of volatility, and a favourable competitive environment following the disappearance of certain players.

The gradual return to more "normal" conditions (narrowing spreads, falling volatility, increased competition) is expected to sharply reduce the segment's contribution to banks' total incomes. In addition, the market stabilisation, or even correction, that could occur following the phase-out of government assistance and the withdrawal of liquidity by central banks is also expected to curb the growth in revenues from these market activities. Lastly, the replacement of complex products with more simple but lower yielding products and the stricter regulatory requirements will tend to structurally undermine investment bank incomes.

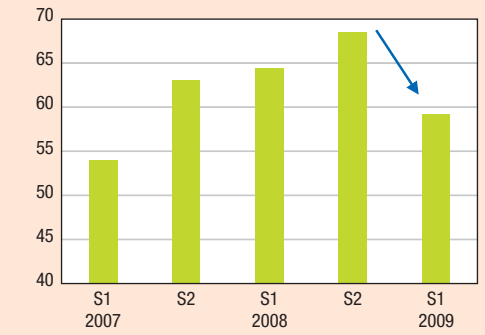
2|2 End of the cost rationalisation process

Efforts to reduce banks' operating costs by reducing staff levels, exploiting business synergies, and outsourcing certain non-core business activities, helped to bring down the operating costs of most of the banks in the sample.

Combined with the increase in incomes, these cost-cutting efforts had a very visible effect on the sector's operating ratio (expenses divided by revenues), which has dropped since the first half of the year. However, cost rationalisation cannot be perpetuated indefinitely and the positive impact on profit margins is expected to fade in the coming quarters.

Average operating ratio of major European banks

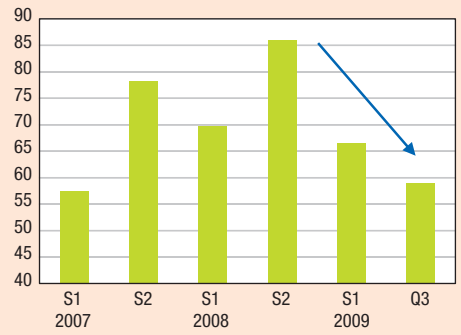
(%)



Source: Bloomberg.

Average operating ratio of major US banks

(%)



Source: Bloomberg.

2|3 Low potential of a rise in interest margins

Banks' traditional intermediation business has benefited in recent quarters from low short-term refinancing rates and the belated impact of monetary policy on customer lending rates, which pushed up margins. Reduced competition and the rise in credit risk contributed to a tightening of lending conditions. But the upside potential for interest margins is currently limited by the very low level of key rates, the normalisation of the interbank market, slowing credit demand and the prospect of a dismantling of bailout programmes. The aggressive behavior of certain operators to recover market shares are also expected to weigh on margins.

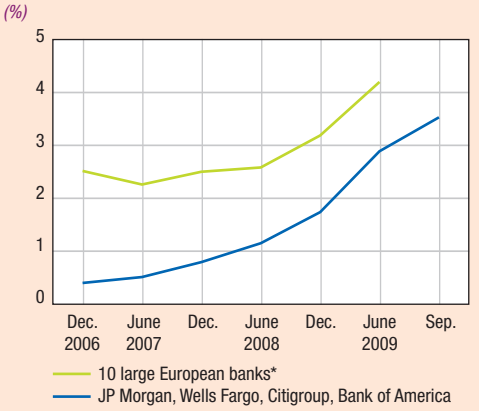
2|4 Continued deterioration in the quality of assets

The quality of the asset portfolios of the major international banks continued to deteriorate. In both Europe and the United States, the sectors that contributed most to depressing profits were leveraged loans, consumer loans (credit cards, revolving credits) and commercial real estate. Non-performing loans escalated by 74% on the balance sheets of the major European banks[7] in June 2009 and by 166% on the balance sheets of the four major US commercial banks[8] in September 2009. The share of doubtful loans debt in total outstanding loans (doubtful loans/gross loans) amounted to an average of 4.2% in the balance sheets of the major European banks in June and 3.5% in the four US banks in September.

Despite the improvement in most macroeconomic indicators, unemployment rate forecasts are still a source of concern and, according to Standard & Poor's forcasts concerning the first quarter of 2010, the bankruptcy peak for speculative companies has still not been reached.

Under the circumstances, the quality of credit portfolios could continue to deteriorate over several quarters. The IMF forecasts show that future impairment losses (mainly on loans) are expected to amount to USD 730 billion and USD 420 billion in the United States and Europe respectively.[9]

Share of non-performing loans in total outstanding loans



** BNP Paribas, CASA, Société générale, Santander, Unicredit, HSBC, Barclays, RBS, Credit suisse and Deutsche Bank.*
Sources: Bloomberg, banks' financial reports, Banque de France calculations (weighted average).

2|5 A decrease in the outstanding amounts of credit

The paltry rise, or even in some cases drop, in outstanding credit is also likely to constrain banking sector profitability by limiting the sector's ability to generate additional income. The improving macroeconomic outlook notwithstanding, household demand remains weak and the persisting rise in unemployment is expected to continue to restrain final consumption. The recovery in lending is also being thwarted by the tightening of banks' private and corporate lending conditions.

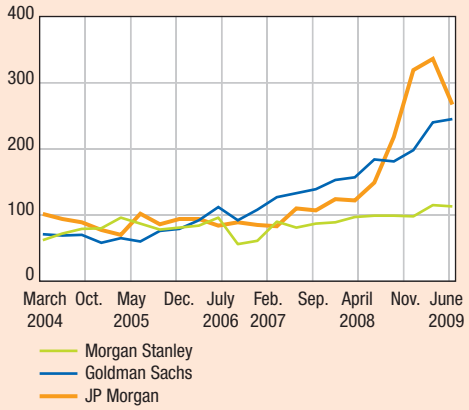
7 *BNP Paribas, CASA, Société générale, Santander, Unicredit, HSBC, Barclays, RBS, Credit suisse and Deutsche Bank.*
8 *JP Morgan, Wells Fargo, Citigroup and Bank of America.*
9 *Global Financial Stability Review, IMF, October 2009.*

2|6 Value-at-risk levels and leverage ratios remain high

Overall, the major US and European banks continue to deleverage but at a slower rate. In the United States, this is due in particular to the capital increases that followed the stress test results. In the first half of 2009, the value-at-risk (VaR) of the major US and European banks levelled off or dropped following the return to normal market conditions.

VaR of the major US banks

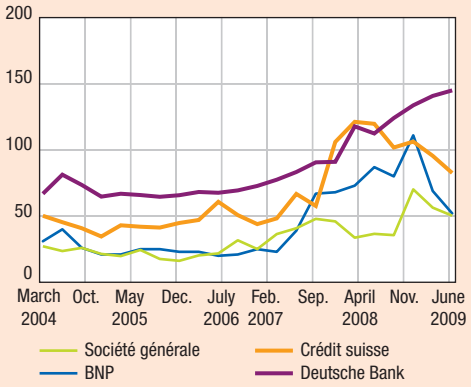
(USD million)



Source: Bank data; Banque de France calculations.

VaR of the major European banks

(EUR million)



Source: Quarterly reports.

3| INSURERS HAVE HITHERTO PROVED MORE RESILIENT TO THE CRISIS, BUT THEY ARE VULNERABLE IN CERTAIN AREAS

3|1 Insurers' business model is less risky and accounting and prudential rules are more favourable

Insurance companies are structurally less exposed than banks to liquidity risk. They are less dependent on market financing than some banks because they are financed ex ante:

• in the damage insurance sector, even in the event of the expiration of a policy, the premium will already have been paid at the beginning of the period;

• in the life insurance sector, funds are usually invested over the long term and, generally, there are tax and contractual penalties on fund withdrawals in all countries.

The accounting rules acted as a buffer – at least temporarily. For insurance companies' investment portfolios, there is an impact on the profit and loss account only if the impairment is "significant and prolonged" (application of IAS 39 and booking of virtually all securities as "available for sale").

In addition, insurance companies benefit from an anti-cyclical buffer: "deferred profit sharing", which can limit the impact of losses on their earnings. When the insurance company makes a profit, policyholders are entitled to at least 85% of the surplus profits, which is calculated based on

the company's earnings. The "deferred profit" is this share of the surplus profits that the insurance companies can allocate in the eight years following the establishment of said profits.In this time interval, the deferred profit may offset the realisation of losses, and thus have a counter cyclical effect.

Lastly, the prudential rules prevented insurance companies from purchasing toxic products thanks to regulatory "firewalls" that limited investments in illiquid assets, from tapping the foreign exchange market (mandatory matching of commitments to policyholders with investments denominated in the same currency)[10], and from investing in certain speculative products (in France, insurance companies are not allowed to sell CDS).

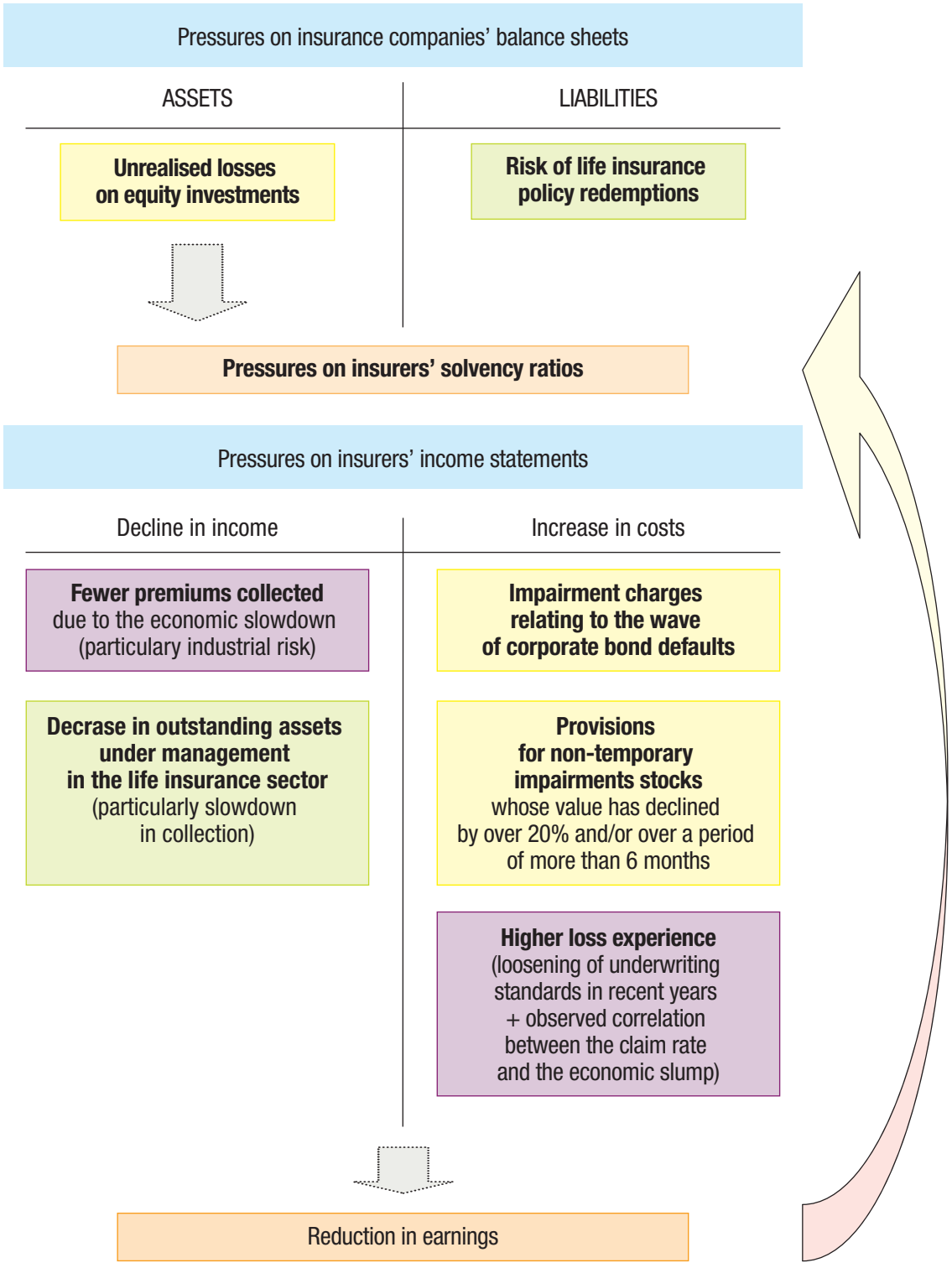
3|2 Sources of risk nonetheless persist on both sides of the balance sheet

Life insurance companies' balance sheet liabilities[11] may be threatened in the event of a drop in asset prices because of the implicit or explicit guarantees given to policyholders. Guaranteed performance products can therefore turn out to be costly. In an extreme scenario of widespread cashing-in of policies (similar to a bank run), the insurance companies would be forced to sell their assets at a discount. The only reaction to the crisis that has been observed so far is a slowdown in premiums collected.

On the assets side, insurers are exposed in their capacity as investors. Insurance companies invest in shares and, as such, hold stock portfolios, which account for 10 to 15% of their balance sheets. Insurers are also exposed to credit and interest rate risk through their bond investments. While insurance companies' exposure to US structured subprime products was not significant in France and Europe, corporate bond portfolios are expected to be weakened by the rise in the default rate and may constitute impairment loss in the income statement. Lastly, the sovereign segment accounts for up to 50% of insurance companies' assets and some insurers could be affected by a rise in long-term rates.

10 With a tolerance of 20%.
11 In addition to the tail risk of markedly higher loss experience: longevity, natural disaster, etc.

Vulnerabilities affecting insurance companies' balance sheets



The financial crisis: a litmus test of financial institutions' organisation and business models

1| BANKS' INTERNAL ORGANISATION IS CALLED INTO QUESTION

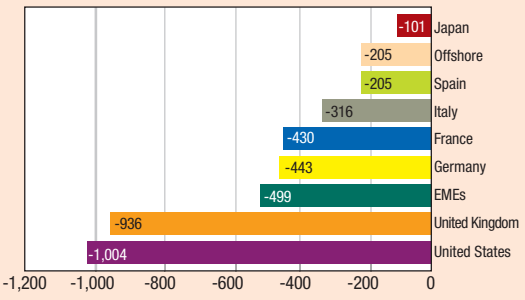
1|1 A significant drop in cross-border activities

After soaring from USD 10,000 billion[12] in 1999 to USD 35,000 billion in 2008, the flow of cross-border loans plummeted from the last half of 2008 to March 2009, falling by USD 2,000 billion in the fourth quarter of 2008 alone.[13]

The counterparty countries or regions that were most affected by the reduction in cross-border activity –mainly, a decrease in cross-border interbank loans– were the United Kingdom (a USD 936 billion drop), the United States (a USD 1,000 billion decrease), a few euro area countries and some emerging economies.[14] Very short maturities aside, liquidity is yet to return on this market: the high counterparty risk continues to prevent banks from lending to each other.

Change in foreign claims of BIS-reporting countries vis-à-vis major counterparts

(From March 2008 to March 2009, USD billions)



NB: Consolidated data.
Source: BIS; ECB calculations.

Several factors account for the decline in cross-border activity:

• reduction in financial leverage
The major international banks have committed to sustainably reduce financial leverage. The impact of deleveraging on cross-border activities is all the more significant that banks' international business has accounted for a larger share of their balance sheets in recent years;

• sharp deterioration of currency swap markets
Spreads on this market, particularly the overnight market, widened considerably in the fourth quarter of 2008;

12 ECB.
13 BIS.
14 BIS figures.

• rising host-country risk
The banks factor into their internal transfer price a parameter that reflects the country risk of countries in which their subsidiaries or branches are located. This risk is often calculated on the basis of sovereign CDS spreads;

• drop in credit supply and demand

• a domestic bias
Certain bailout programmes required that, in exchange, beneficiary banks make commitments to their domestic markets.

These different factors are prompting banks to weigh up the benefits and the risks of the cross-border business conducted by their subsidiaries and branches, and to consider how cross-border liquidity should be managed.

1|2 Organisational changes: towards the reorganisation of subsidiaries and branches?

According to a 2007 study,[15] banks tend to prefer a "branch" organisational structure in countries that have high tax pressure and those that have few legal restrictions on entry to the market. They are more likely to operate as "subsidiaries" when their strategy is to become permanently established on a market and to develop retail banking activities. Furthermore, a parent bank's responsibility vis-à-vis its branches or subsidiaries, under different risk scenarios, has considerable bearing on the type and conduct of the bank's overseas operations.

The financial crisis might perhaps upset this conventional logic. It has forced major international banks to review their organisation based on criteria which in times of market growth and cheap and abundant liquidity were deemed secondary. Banks may notably be led to refocus their financing strategies on increased efficiency and reduced risk taking. There are two possible reactions to the new problem. The first is to diversify overseas establishments' sources of financing to give preference to local sources and thus prevent the spreading of liquidity shocks. The second, more structural response is to opt for an organisational structure with a parent bank and subsidiaries. This solution is not without its disadvantages. Cross-border financing activities could decrease, leading to a rise in the cost of financing and the creation of pockets of "trapped liquidity" in various areas of the world.

Some major international banks are currently reassessing the appropriateness of their liquidity management and internal financing policies. Preliminary trends indicate that they are veering towards increasingly decentralised liquidity management. For example, several banks are implementing liquidity stress tests not only at their group level but also in their branches.

15 *"How banks go abroad: Branches or subsidiaries?" –Eugenio Cerutti (International Monetary Fund), Giovanni Dell'Ariccia (World Bank), Maria Soledad Martinez Peria (World Bank), Journal of Banking and Finance.*

2| CHANGING BUSINESS MODELS AND INCENTIVES

The crisis started in corporate and investment banking, and more specifically, in securitisation markets inflated by the sharp surge in the use of risk transfer techniques. Corporate and investment banks were the hardest hit. They have been forced to revise their strategies and to adopt more balanced models. Some banks have had to team up with more diversified operators (Merrill Lynch with Bank of America and Bear Stearns with JP Morgan). Others have ceased to exist (Lehman Brothers). Even Goldman Sachs and Morgan Stanley, the two US investment banks that most skillfully navigated the financial crisis, have been forced to adjust: they both requested bank holding company status to the Fed so as to be able to receive deposits from the public. In Europe, even the institutions with a more "universal" profile have repositioned themselves to ensure their sustainability by investing in retail banks and by securing their sources of funding: Deutsche Bank has acquired 30% of Postbank; BNPP has purchased Fortis, etc.

In the financial turmoil, the banks that have up to now proven most resilient to the crisis are those with diversified risk profiles and funding sources, i.e. the "universal banks". These banks have many strings to their bow thanks to their wide-ranging activities (corporate and investment banking, retail banking, asset management, private banking, project finance, public sector finance) and their geographical diversification (business development in different regions with varying availability of banking facilities). In addition, their multiple funding sources limit the concentration of risks. Lastly, they are more resilient due to their recurring earnings: some of these banks have been able to implement a growth model that is less correlated with changes in business conditions by increasing the share of fees in their income. This profile acts as a shock absorber and makes it possible to maintain a net banking income that serves as a buffer.

The desire for more transparency and simplification

1| REVIVING THE SECURITISATION MARKET

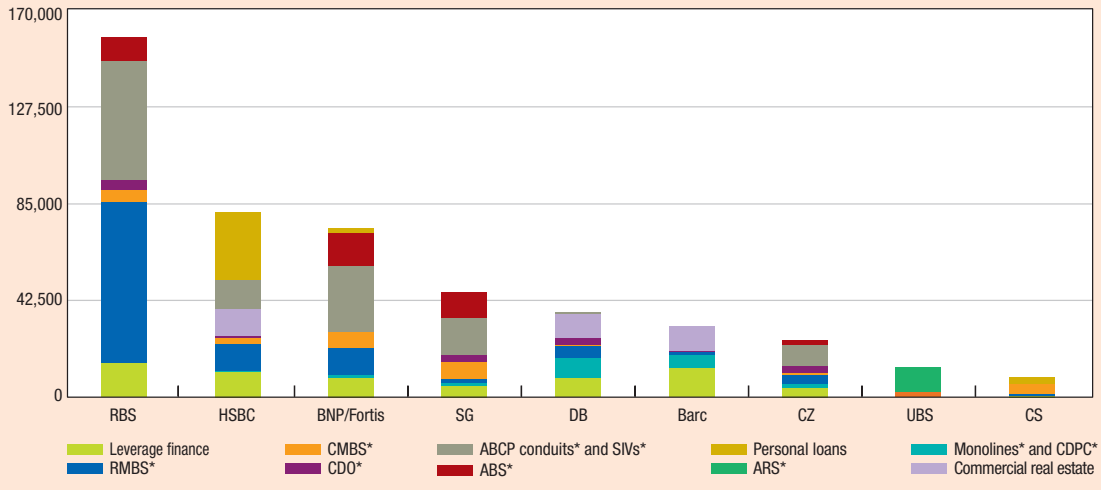
1|1 The market that set off the crisis…

The crisis highlighted the flaws of the originate-to-distribute model and the role of securitisation. Deficiencies in information flows at all stages of securitisation played a decisive role in the crisis dynamics. Issuing institutions, intermediaries, investors and external risk assessors all have specific responsibilities and perspectives.

One of the reasons why the market ground to a halt at the start of the crisis in 2008 was the sharp drop in loans granted by financial institutions, which are the raw material for securitisation. In 2008, the only transactions that were arranged were "retained" securitisations, i.e. securitisations retained by banks in their balance sheets due to the lack of investors to subscribe for the issues (see chart). Even though the banks recorded substantial asset writedowns charges on risky structured products, they still have significant exposure to these complex products in their balance sheets and are trying to get rid of them by deleveraging.

Structured products and leveraged loans in European banks
30 June 2009

(EUR billions)



RBS : Royal Bank of Scotland ; HSBC : Hong Kong & Shanghai Banking Corporation ; SG : Société générale ; DB : Deutsche Bank ; Barc : Barclays Bank ; CB : Commerzbank ; UBS : Union de banques suisses ; CS : Crédit suisse

** See glossary.*
Source: Quarterly reports.

1|2 …is nonetheless a useful market

Securitisation has numerous potential advantages. By separating credit origination from the ultimate allocation of risk and thus enabling broader dispersion of risk, securitisation can enhance the overall efficiency of financial intermediation. In the process, operators can optimise their comparative advantages, especially with regard to information processing and risk management. It is therefore important to revive this market while ridding it of the flaws brought to light by the crisis.

There are increasing signs of the reopening of the primary and secondary securitisation markets.

• In the United States, the Term-asset-backed securities loan facility (TALF), the Fed's lending programme that aims to promote consumption by financing buyers of asset-backed securities (ABS), is having a positive effect on the market.

In addition, Avis issued and placed USD 450 million worth of securitised lease receivables in mid-September 2009 without having recourse to TALF.

• In Australia, ME Bank launched and placed a USD 231 million RMBS (residential mortgage-backed securities) issue. It was the first non-government backed RMBS deal since the collapse of Lehman Brothers.

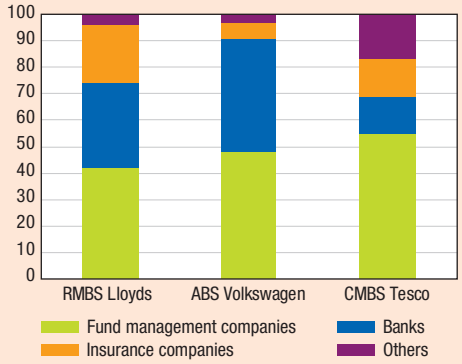
• In Europe, after a full year without a single public securitisation, the market became active again in the summer of 2009, and above all in September, when four European securitisation programmes were launched and placed in public. This follows a long lull in activity in which the tranches issued were held by originators or privately placed. In total, almost EUR 6 billion in RMBS, CMBS and ABS have been issued:

– several commercial mortgage-backed security (CMBS) issues were offered in the United Kingdom in the summer of 2009;

– in mid-September, Volkswagen and Lloyds launched auto lease ABS and residential mortgage-backed securities (RMBS) issues respectively. Both issues were heavily oversubscribed and were increased (see chart);

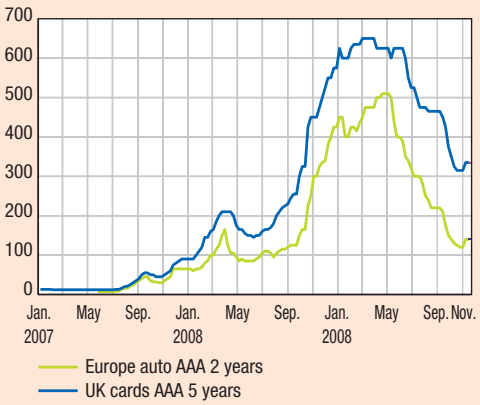
Investor base for recent issues

(%)



Spreads on European and UK AAA-rated ABS

(basis points)



Source: JP Morgan.

• in the United Kingdom, spreads on British RMBS fell under the psychological 200 basis point barrier in August, with some paper hovering at 150 basis points. More generally, spreads narrowed on the secondary markets in Europe and the United States.

1|3 ...and justifies certain changes

The current normalisation of securitisation transactions should not make us lose sight of the fact that the market needs to be reformed, and, in particular, to be more transparent. It is essential that all parties have access to good quality information, that the responsibilities of the various stakeholders be clear-cut and that discipline be reinforced while ensuring that each stakeholder shoulders a proportionate share of exposure to overall risk. In this context, regulatory authorities and the IMF are working on how to improve the legal framework of securitisation:

• seller's side: requiring originators to retain at least 5% of the securitised product on their own balance sheets;

• buyer's side: possibly imposing specific regulatory capital charges for re-securitisations.

2| HEDGE FUNDS AND RATING AGENCIES: NECESSARY CHANGES

2|1 Strategies and regulation of hedge funds

In 2007 and early 2008, the hedge fund industry prided itself on having better withstood the crisis than the rest of the financial sector. However, by mid-2008, the industry was experiencing performance losses and large-scale redemptions. Funds are expected to refocus their business models on three core areas:

Changes in the hedge fund / prime broker relationship: less access to and higher cost of key prime brokerage services; use of a variety of prime brokers

Banks, which are themselves being forced to deleverage, are limiting their financing to hedge funds. They have also reduced their stock of securities, which limits their securities lending activity and prevents hedge funds from short selling. The decline in these activities, which are highly lucrative for prime brokers, is forcing them to rationalise by doing away with less profitable customers or raising their profit margins on the services offered.

Prime brokers' new strategy has contributed to undermining the bond of trust that existed between these brokers and hedge fund investment managers. In addition, the rescue of Bear Stearns and the collapse of Lehman Brothers have deepened uncertainty about counterparty risk and the security of assets deposited with prime brokers. Since these events, hedge funds have sought to diversify their counterparties by using a variety of prime brokers. This will lessen the concentration of the prime brokerage industry, 65% of which was taken up by Goldman Sachs, Morgan Stanley and JP Morgan. Today, hedge funds are turning increasingly to European banks such as Crédit suisse, Deutsche Bank and BNP Paribas.

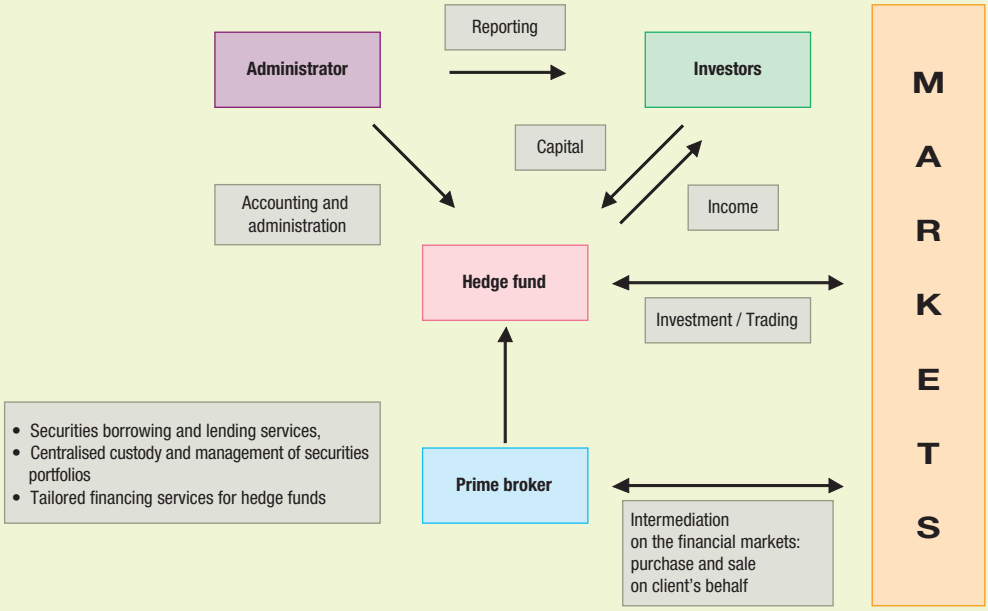
Box 13 Prime brokers: providers of investment services

Most large international banks have set up prime brokerage subsidiaries that offer specific services to hedge funds. By providing these services, prime brokers enable fund managers to concentrate on their core activity –investment management– and to outsource more specialised functions to a third party. Prime brokers provide fund managers with a package of services such as:

- *margin financing and securities lending for short sale purposes,*
- *coordination of the various parties involved in the fund start-up phase,*
- *capital introduction: introducing hedge funds to investors and other managers,*
- *processing and settlement of trades,*
- *performance analysis and operational support,*
- *portfolio reporting,*
- *risk management advisory services.*

By virtue of these functions, prime brokers provide investment services (execution of orders and proprietary trading), and more importantly, custody of all or some of the fund's assets (to effect delivery versus settlement of securities, provide reporting services, etc.).

A prime broker's ability to raise funds for its hedge fund client is the key element that determines the fund's leverage ratio. It is also the main channel for transmitting tensions between hedge funds and the banking sector.



Greater independence or outsourcing of certain functions

The difficulties that some hedge funds faced in trying to recover their assets following the collapse of Lehman Brothers and the Madoff fraud are currently pushing them to ensure that custody, valuation and administrative services are outsourced or are at least independent of the fund, in order to track and monitor asset movement and valuation. This is the current aim of planned regulatory changes. The widespread use of third-parties to provide certain operational services will lead to higher operating costs for the funds, which will be an increasingly heavy burden for low-performing and smaller-sized funds.

Greater transparency

Their disappointing performance, the Madoff Ponzi scheme and the illiquidity problems they face mean that hedge funds need to regain investors' trust. Transparency is now of the essence. According to the Deutsche Bank's annual study, transparency was cited as one of investors' five criteria for selecting hedge funds in March 2009; it was not listed at all as a criterion in 2008. In addition, planned regulatory changes call for transparency vis-à-vis investors and supervisory authorities (see page 117 for remarks by Christian Noyer, September 2009, London). Lastly, the shift to managed account platforms is expected to continue given the platforms' advantages in terms of liquidity and transparency, and investors' increasing interest: 43% of investors are considering making investments through managed accounts.

2|2 Activities and regulation of rating agencies

The current rating agency business model has come under scrutiny in the wake of the crisis

Reminiscent of the Asian crisis of 1997, the current financial crisis has sparked heavy criticism of rating agencies, particularly from investors disappointed by the very mediocre performance of highly-rated financial assets. One of the main functions of markets is to constantly process all available information in order to derive a price for financial assets. However, not all economic agents have the same ability to analyse the flow of available information. The banks therefore use the in-depth knowledge they have of their customers to assess the risks they incur when granting them credit. Conversely, as a general rule, market investors do not have the capacity to conduct detailed and up-to-date analyses of credit risk. They are also more loath to pay the high cost of processing the information required to assess this risk given that this is a task that professionals, specifically rating agencies, are supposed to carry out in order to ensure market efficiency.

Rating agencies give investors as a group access to simple, clear and concise information on issuers' default risk. The agencies inform banks that create structured products of the methods and models they use to assess default risk. They also lay down the other criteria that securitisation vehicles must meet in order to issue highly-rated securities. Rating agencies have thus progressed from being mere intermediaries to quasi-regulators of securitisation and structured products, even though they may be subject to conflicts of interest between issuers (their customers who pay for these ratings) and investors (who use the ratings).

But ratings were a source of misunderstanding between some investors and rating agencies. By radically revising their ratings and methodologies on subprime structured products, rating agencies have revealed two aspects of their work that some investors had not adequately taken into account.

Firstly, ratings cover only default risk and do not incorporate other risks such as market or illiquidity risk. These other risks have however turned out to be decisive in recent developments in the prices of structured products.

Secondly, using the same rating scale for these structured products as for traditional bonds turned out to be misleading because the products themselves and their inherent risks are very different. Due to the way in which they are built, structured products are intrinsically much more volatile than bonds, as reflected in their price movements in recent months.

Defining new regulations

Rating agencies must therefore be better regulated. Regulations are being tightened with a view to registering agencies, increasing transparency on rating processes and the role of agencies in securitisation, and differentiating rating scales used for structured products from those for bonds so as to enable investors to better apprehend the specific characteristics of these products.

The international bodies in conjunction with national authorities began to work on new regulations for credit rating agencies from early 2009. The International Organisation of Securities Commissions (IOSCO) has published a report on the role of credit rating agencies in the US subprime crisis and made amendments to the Code of Conduct for credit rating agencies. At the request of the G7, the Financial Stability Forum (now the Financial Stability Board) has recommended actions to improve the way credit rating agencies conduct their business. On 2 and 3 April 2009, in its final declaration, the G20 defended the principles of the registration of credit rating agencies, separate rating scales for structured products and the publication of rating methodologies and disclosure of ratings history.

In Europe, mandatory registration of all credit rating agencies will be enforced in 2010. Agencies will be required to comply with rules for managing conflicts of interest and the rotation of analysts.

In the United States, the Securities and Exchange Commission (SEC) announced in September 2009 that it would take measures to enhance the supervision of credit rating agencies: detailed disclosure requirements for certain products, sharing of data by issuers, etc.

New financial stability institutions

1| THE FINANCIAL STABILITY FORUM EXPANDS TO ENCOMPASS G20 MEMBER COUNTRIES

In March 2009, the Financial Stability Forum (FSF) decided to broaden its membership to include all G20 countries. The FSF was set up in 1999, in the aftermath of the Asian financial crisis of 1997, by G7 finance ministers and central bank governors. Its aim was to promote international financial stability through enhanced information exchange and international cooperation in financial system supervision and oversight. The FSF was made up of finance ministries, central banks and national supervisory authorities from the G7 countries, Australia, Hong Kong, the Netherlands, Singapore and Switzerland.

The financial crisis prompted the broadening of the membership and mandate of the FSF. The international nature of the crisis as well as its rapid spread to different markets and the emerging economies highlighted the importance of having representative international institutions that are able not only to alert governments and regulatory authorities on practices that could upset the equilibrium of the global financial system, but also to define corrective proposals. The FSF was not a suitable structure for this purpose.

Just before it became the Financial Stability Board (FSB), a dozen new members joined the Financial Stability Forum (FSF). This broadened membership is aimed at increasing the FSF's ability to contribute to ongoing reforms of the international financial system.

The new broader mandate of the FSF –re-established as the Financial Stability Board (FSB)– includes:

• assessing the vulnerabilities affecting the financial system and identifying and overseeing the actions needed to address these vulnerabilities;

• promoting coordination and information exchange among authorities responsible for financial stability;

• monitoring market developments and making recommendations on regulatory policy.

The FSB has therefore become the financial counterpart of the IMF. The IMF's role will be to oversee macroeconomic equilibrium while the FSB oversees financial markets, financial institutions and prudential regulations.

Box 14 The Financial Stability Board

Objectives

The Financial Stability Board (FSB) was established at the G20 summit in London in April 2009 to enhance the global coordination role previously assumed by the Financial Stability Forum (FSF), to address the vulnerabilities affecting economic systems and to promote financial stability by developing and implementing regulatory and supervisory policies. The FSB has a broader mandate than its predecessor.

The FSF decided at its plenary meeting of March 2009 to broaden its membership by inviting several G20 countries as new members: Argentina, Brazil, China, Korea, India, Indonesia, Mexico, Russia, Saudi Arabia, South Africa and Turkey. Spain and the European Commission also became members of the FSF and, ergo, the FSB.

Membership

The FSB secretariat is based at the Bank for International Settlements in Basel. The FSB is made up of high-level representatives from national financial stability authorities (central banks, regulatory authorities and finance ministries), financial institutions, standard-setting bodies and committees of central bank experts. The FSB is currently chaired by Mario Draghi, Governor of Banca d'Italia.

Structures

The FSB's mandate is to assess vulnerabilities affecting the financial system and to identify and oversee the actions needed to address them. The FSB has set up the internal structures required to fulfil this mandate:

- *a steering committee,*

- *three standing committees for vulnerabilities assessment, supervisory and regulatory cooperation and standards implementation.*

The FSB has also established a Cross-border Crisis Management Working Group whose task is to provide a framework to implement FSF principles for cross-border cooperation on crisis management. It will continue to oversee the advances made in the implementation of G20 recommendations.

Excerpt from remarks by ***Christian Noyer****, Governor of the Banque de France, London, 4 September 2009*[16]

[…]

"The financial crisis has taught us some very hard lessons. While there are many causes to the crisis, including, maybe, macroeconomic policies, it is also clear that it forces us to reconsider the way we regulate and supervise the financial system. That is what we are doing, and this will take a significant part in tomorrow's discussions between G20 Ministers and Central Bank Governors. At stake is the scope of financial regulation, its nature and its objectives.

THE SCOPE OF FINANCIAL REGULATION

We entered this crisis with many unregulated entities playing a major role in the financial system. So, from a supervisory perspective, there were huge "black holes", including what has been called a "shadow banking system" where most of the excesses of securitisation took place.

Not any more. Over the last twelve months, a coordinated effort by industrialised and emerging economies alike has brought most important financial actors under the umbrella of supervision. Principles and rules have been enacted for rating agencies to manage their conflicts of interest, enhance their rating process, increase transparency and be supervised through compulsory registration. Hedge funds will go through a process of licensing and oversight: they will have to meet transparency requirements towards both investors and regulators. Finally, off-balance sheet activities will be consolidated and controlled through changes in accounting and prudential frameworks.

THE NATURE OF FINANCIAL REGULATION AND SUPERVISION IS CHANGING

Here, I see two major trends. In the area of financial supervision, we must complement ***microsupervision with macrofinancial supervision****, taking into account the systemic importance and interconnectedness of institutions, markets, instruments and the cumulative risks and dynamics that they create. System-wide phenomena that went unchecked, such as the* ***aggregate*** *rise in leverage and maturity transformation, must no longer escape our vigilance.*

All countries are moving in this direction. In Europe, following the Larosière Report, we are setting up a European Systemic Risk Board (ESRB). In the United States, it has been proposed that the Federal Reserve become the future systemic supervisor. In France, the government has decided to merge insurance and banking supervision under the umbrella of a "systemic" college under the auspices of the Banque de France.

16 http://www.banque-france.fr/gb/instit/telechar/discours/2009/RSF_Londres.pdf

Clearly, the move towards macrofinancial supervision means that central banks will have to assume additional responsibilities. History tells us that central banks' tasks have taken major turns following financial crises.

Second, regulation will become more ***global****. Emerging market economies might feel that they are not part of the problem since they did not play a role in starting the crisis; but they are major actors and are part of the solution. Henrique Meirelles sitting at the table next to me is truly a sign of the times, a sign clearly underlined by the increasing role of G20 and the recent expansion of the Financial Stability Board.*

International standards in the field of prudential rules have already paved the way for an international level playing field. I strongly hope that Basel II can soon become a truly universal standard and framework for banking supervision. Beyond prudential rules, it is of the utmost importance that convergence be achieved in accounting standards if only to maintain a level playing field. Lastly, improved coordination between supervisors through supervisory colleges for all systemic actors (not just banks) would be a significant step forward.

THE OBJECTIVES OF FINANCIAL REGULATION HAVE CHANGED

It remains important to increase the resilience of the financial system. *We need to ensure that intermediaries build, over time, stronger capital and liquidity cushions, especially for trading activities. The Basel Committee has been very active and is currently devising proposals."*

[…]

2| A new European organisation

The February 2009 Report issued by the Larosière group on financial supervision in the European Union made a series of proposals that are leading to the establishment of new pan-European supervisory bodies. In March 2009, the European Commission asked European leaders to endorse the main proposals of the Larosière Report. In June 2009, the European Council approved conclusions building on the recommendations of the report. In September 2009, the European Commission adopted a set of legislative proposals aimed at strengthening financial sector supervision. These proposals were the basis of the EU's position at the G20 summit of 24-25 September 2009 in Pittsburgh. The practical arrangements of this new supervisory regime are currently under discussion.

2|1 The European Systemic Risk Board

The European Systemic Risk Board (ESRB) will conduct macroprudential supervision by assessing the potential threats to financial stability in the European Union and, where necessary, issue risk warnings and recommendations with a view to removing these threats. The ESRB will be composed of the ECB General Council members, the future European supervisory authorities, the European Commission and the president of the Economic and Financial Committee.

2|2 The European System of Financial Supervisors

The Larosière Report proposed the establishment of a European System of Financial Supervisors (ESFS). The ESFS will be a decentralised network of the three new European financial supervisors charged with carrying out the microprudential supervision of banks, insurance companies and markets. Plans for the ESFS are also still under discussion. The proposals provide for these authorities to have binding powers as opposed to the three committees they will be replacing, which played a merely advisory role (Committee of European Banking Supervisors – CEBS for banks, Committee of European Insurance and Occupational Pensions Supervisors – Ceiops for insurance companies and Committee of European Securities Regulators – CESR for markets). The ESFS will develop and vote by qualified majority on technical standards that will be applied throughout Europe (the standards will however only become binding law after formal endorsement by the European Commission) and will be responsible for resolving disagreements between national supervisors, where necessary by arbitration.

3| A new role for the IMF?

3|1 Lender to emerging market and industrialised economies

The International Monetary Fund provides resources to help its member countries in balance of payments difficulties. The IMF's financial support allows the ailing economies to rebuild their foreign exchange reserves, stabilise their currencies, continue to pay for imports and restore growth conditions. The IMF offers several types of loans and initiatives: the Poverty Reduction and Growth Facility is the lending window through which the IMF assists low-income countries; emergency assistance supports recovery programmes in countries afflicted by natural disasters

and armed conflict, and the Heavily Indebted Poor Countries Initiative aims to reduce the debt of heavily-indebted poor countries that are implementing adjustment and reform programs.

The financial crisis led the IMF to sharply increase its total lending. Three emerging economies (Hungary, Romania and Ukraine) each received over USD 15 billion. More significantly, the IMF lent USD 2.1 billion to Iceland, the first such loan to a developed economy since the assistance provided to the United Kingdom in 1976. This is a new role for the IMF, which has traditionally provided financial support to developing countries, particularly in the southern hemisphere.

The April 2009 G20 summit placed the IMF at the forefront of the new international agenda. Firstly, its lending resources were tripled to USD 750 billion. G20 leaders also agreed for the IMF to make a new allocation of Special Drawing Rights (SDR)[17] which will provide the equivalent of USD 250 billion to the world economy. The IMF reformed its lending framework, creating in particular a new flexible credit line and modernising IMF conditionality for all borrowers in order to adapt it to the primary objective of dealing with the crisis while ensuring that the vulnerable segments of the population are properly protected. Lastly, the 26 participants in the New Arrangements to Borrow (NAB)[18] have called for an expansion of the credit line and of these Arrangements via the potential inclusion of new participants.

3|2 A warning and advisory role

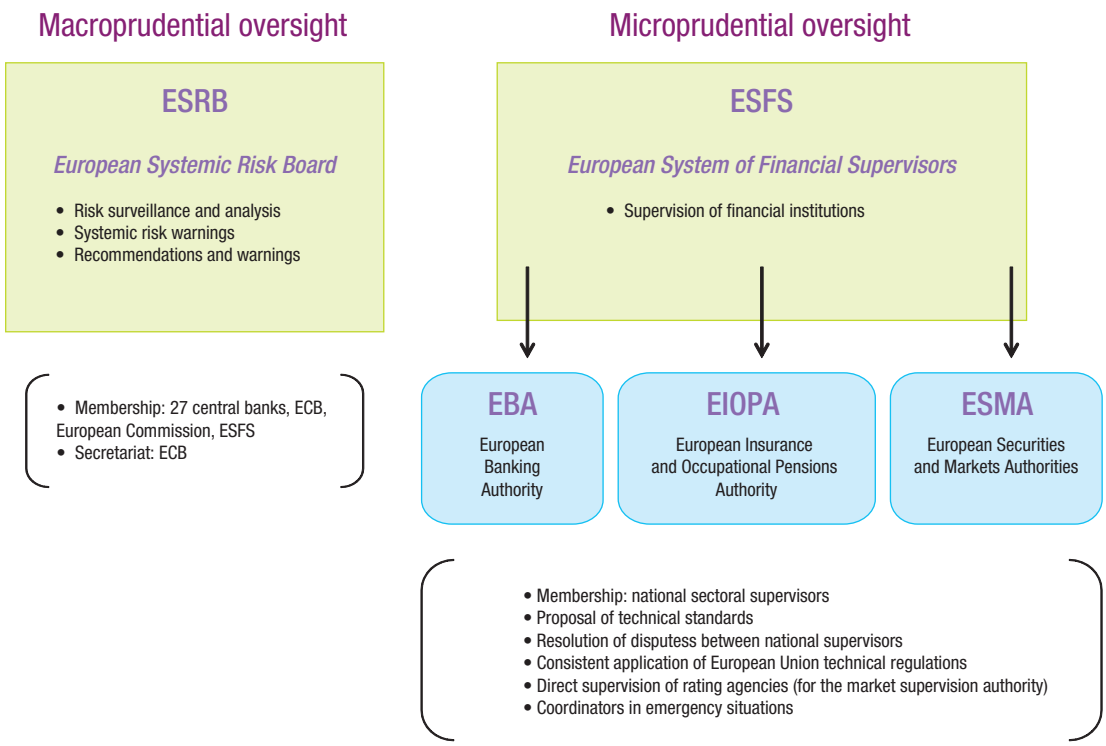
The IMF is also responsible for supervising the international monetary system and monitoring the economic and financial policies of its 186 member countries so as to identify possible risks to national and international stability. Though the Fund pointed out financial sector risks and called for balance sheets to be stabilised, these warnings were not adequately backed and taken into consideration by decision-makers.

In addition, the G20's Monetary and Financial Committee mandated the IMF to conduct Early Warning Exercise (EWE) in collaboration with the Financial Stability Board. To be conducted semi-annually, the exercises are designed to strengthen analysis of the risks stemming from an increasingly interconnected world, and should lead to more rapid and effective responses to these risks. EWE was presented for the first time in full to member countries at the annual meetings of the IMF and the World Bank group in Istanbul in October 2009. The IMF will also strengthen its financial sector assessment program, by focusing further on international and systemic aspects and through closer links with bilateral supervision.

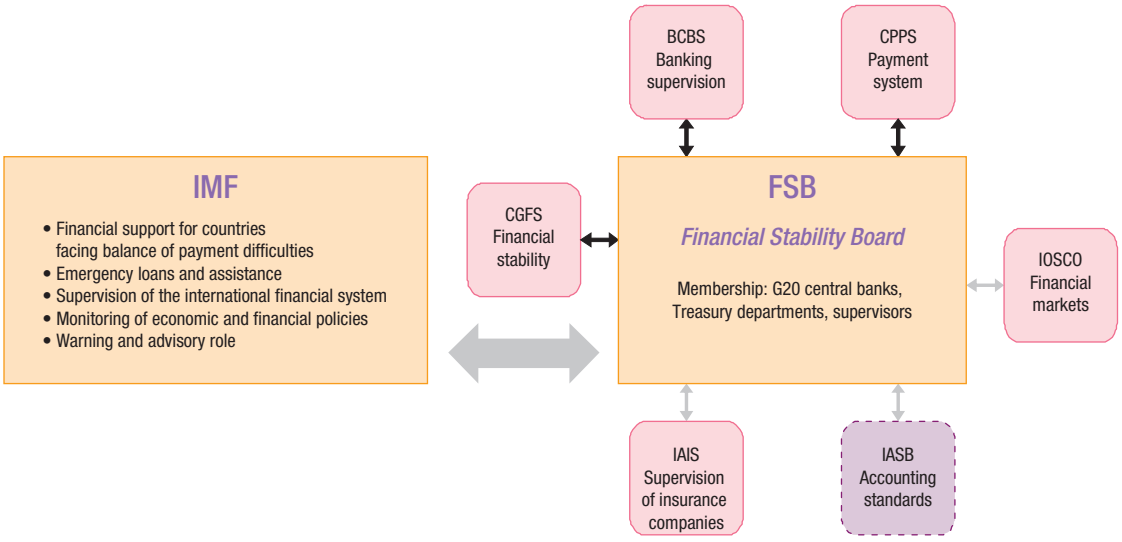
17 *The Special Drawing Right (SDR) is an international reserve asset, created by the IMF in 1969 to supplement its member countries' official reserves.*

18 *The New Arrangements to Borrow (NABs) which came into force in 1998 are credit arrangements between the IMF and a group of 26 member countries and institutions.*

European level



International level



Excerpt from the G20 Leaders' Statement
(Pittsburgh Summit, 24 and 25 September 2009)

[…]

[We meet in the midst of a critical transition from crisis to recovery to turn the page on an era of irresponsibility and to adopt a set of policies, regulations and reforms to meet the needs of the 21st century global economy.

[…]

Today, we reviewed the progress we have made since the London Summit in April. Our national commitments to restore growth resulted in the largest and most coordinated fiscal and monetary stimulus ever undertaken. We acted together to increase dramatically the resources necessary to stop the crisis from spreading around the world. We took steps to fix the broken regulatory system and started to implement sweeping reforms to reduce the risk that financial excesses will again destabilise the global economy.

[…]

Today we agreed to launch a framework that lays out the policies and the way we act together to generate strong, sustainable and balanced growth. We need a durable recovery that creates the good jobs that our people need.

We need to shift from public to private sources of demand, establish a pattern of growth across countries that is more sustainable and balanced, and reduce development imbalances. We pledge to avoid destabilising booms and busts in asset and credit prices and adopt macroeconomic policies, consistent with price stability, that promote adequate and balanced global demand.

[…]

[We agreed to] make sure our regulatory system for banks and other financial firms reins in the excesses that led to the crisis. Where reckless behavior and a lack of responsibility led to crisis, we will not allow a return to banking as usual.

We committed to act together to raise capital standards, to implement strong international compensation standards aimed at ending practices that lead to excessive risk-taking, to improve the over-the-counter derivatives market and to create more powerful tools to hold large global firms to account for the risks they take. Standards for large global financial firms should be commensurate with the cost of their failure. For all these reforms, we have set for ourselves strict and precise timetables.

[We agreed to] reform the global architecture to meet the needs of the 21st century. After this crisis, critical players need to be at the table and fully vested in our institutions to allow us to cooperate to lay the foundation for strong, sustainable and balanced growth.

We designated the G20 to be the premier forum for our international economic cooperation. We established the Financial Stability Board (FSB) to include major emerging economies and welcome its efforts to coordinate and monitor progress in strengthening financial regulation. We are committed to a shift in quota shares to dynamic emerging markets and developing countries of at least 5% from over-represented countries to under-represented countries using the current quota formula as the basis to work from. We agreed to significantly increase the voting power of developing and transition countries that are under-represented in the World Bank. We called on the World Bank to play a leading role in responding to problems whose nature requires globally coordinated action, such as climate change and food security.

[…]

Box 15 "The big Gs": G7, G8, G10 and G20

G7	G8	G10	G20
Germany	Germany	Germany	Germany
Japan	Japan	Japan	Japan
France	France	France	France
United States	United States	United States	United States
United Kingdom	United Kingdom	United Kingdom	United Kingdom
Italy	Italy	Italy	Italy
Canada	Canada	Canada	Canada
	Russia	Belgium	Russia
		Sweden	Argentina
		Netherlands	Australia
		Switzerland	Brazil
			China
			India
			Indonesia
			Mexico
			Saudi Arabia
			South Africa
			South Korea
			Turkey
			European Union

The G7

Group of Seven (G7) meetings at the level of heads of state and government have been held once a year since the Rambouillet summit in France in 1975. The first summit brought together six countries: France, Germany, Italy, Japan, the United Kingdom, and the United States.

The G7 meeting of finance ministers and central bank governors replaced the G5 as the main policy coordination body in 1986-1987, particularly following the Louvre Accord in February 1987, which was signed by the G5 plus Canada, and subsequently endorsed by the G7.

Since1987, G7 finance ministers and central bank governors have met at least twice a year to monitor developments in the world economy and assess economic policies. The Managing Director of the IMF generally participates, by invitation, in discussions of G7 finance ministers and central bank governors that relate to surveillance.

The initial agenda has broadened over time to include more "micro" issues such as employment, the environment, drug trafficking, human rights, arms control, etc.

The G8

The term G8 was conceived when Russia first participated in the 1994 G7 Summit in Naples. In 1997, Russia once again joined the Denver Summit for political discussions following the conclusion of the G7 economic summit. Russia joined as a full participant at the Birmingham Summit in 1998, marking the establishment of the Group of Eight (G8). The G8 convenes annual summits of heads of state or government of the major industrialised countries to discuss the main economic and political issues on their agenda.

The G10

The Group of Ten (G10) was established in 1961 to make resources available to the IMF via the "General Arrangements to Borrow" (GAB), a supplementary borrowing arrangement that can be invoked if the IMF's resources are below member countries' needs.

The G10 subsequently became an OECD working group including central bank governors and finance ministers of the 10 "leading" OECD member countries plus Switzerland. It is within the G10 that the first discussions on the management of the international monetary system were held. The G10 has however often been the

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scene of disagreements between the United States and the European countries. The United States did not agree with the overly strong European presence within this group – seven out of ten member countries were European. The establishment of the G7 did not lead to the dismantling of the G10. Its role evolved and the G10 has become a forum for central bank governors to discuss international financial stability issues.

The G20

The Group of Twenty (G20) was established at the G7 finance ministers' meeting on 25 September 1999 in Washington. The G20 was created as a response to the financial crises of the late 1990s, to adequately recognise the emerging-market countries in the international institutions, and to promote greater international financial stability. The G20 is made up of the finance ministers and central bank governors of 19 countries. The European Union is the 20th member.

Together, G20 member countries represent 90% of global GDP, 80% of world trade and 2/3 of the world's population.

The Managing Director of the IMF and the President of the World Bank, as well as the Chairs of the International Monetary and Financial Committee and the Development Committee of the IMF and the World Bank also participate in G20 meetings.

The G20's mandate is to promote open and constructive discussion between industrialised and emerging-market countries on key economic issues such as financial stability. By contributing to the strengthening of the international financial architecture and providing opportunities for dialogue on national policies and international cooperation, the G20 seeks to support growth and development around the world.

The G20 aims to encourage its members to adopt common and internationally- recognised standards in areas such as the transparency of tax policy, money laundering and financing terrorism.

At the G20 summit in London in April 2009, G20 member countries pledged to:

- *restore confidence, growth and jobs;*
- *repair the financial system to restore lending;*
- *strengthen financial regulation to rebuild trust, notably by establishing a new Financial Stability Board (FSB);*
- *fund and reform international financial institutions to overcome this crisis and prevent new ones;*
- *promote global trade and investment and reject protectionism to underpin prosperity;*
- *build an inclusive, green and sustainable recovery;*
- *triple resources available to the IMF to USD 750 billion, support a new special drawing rights (SDR) allocation of USD 250 billion, support at least USD 100 billion of additional lending by the multilateral development banks (MDBs), ensure USD 250 billion of support for financing commerce, and use the additional resources from agreed IMF gold sales for concessional finance for the poorest countries.*

The main steps in the unfolding of the crisis from July 2007 to December 2009.

2007	Events
July	Bear Stearns announces the collapse of its two hedge funds specialising in credit derivatives.
31 July	The German State bank KfW agrees to guarantee a liquidity line of up to EUR 8.1 billion.
1 August	The German Finance Minister announces a EUR 3.5 billion rescue plan to prevent failure of IKB.
7 August	BNP Paribas suspends valuation of several investment funds.
9 August	The Eurosystem offers unlimited overnight liquidity.
17 August	The US Federal Reserve System (Fed) increases the maximum maturity of term from overnight to 30 days.
23 August and 12 September	The ECB sets up one supplementary longer-term refinancing operations (will be renewed throughout 2007, 2008 and 2009).
14 September	The announcement by the Bank of England to give Northern Rock, the fifth largest UK bank, an emergency loan cause a run on the bank's deposits.
18 September	The Fed lowers its key rate by 0.50%, to 4.75%.
1 October	UBS, the largest Swiss bank, announces asset writedowns to the tune of EUR 2.4 billion.
24 October	Merrill Lynch announces USD 8.4 billion in asset writedowns.
31 October	The Fed lowers its key rate by 0.25%, to 4.5%.
11 December	The Fed lowers its key rate by 0.25%, to 4.25%.
12 December	The Fed, the ECB, the Bank of Canada, the Bank of England and the Swiss National Bank announce measures to address elevated pressures in short-term dollar funding markets. The 28-day Term Auction Facility is unveiled.
2008	
15 January	Citigroup reports record losses (USD 9.83 billion in the fourth quarter of 2007). Moreover, the group announces asset writedowns totalling USD 18.1 billion.
22 January	The Fed lowers its key rate by 0.75%, to 3.5% at its extraordinary Federal Open Market Committee (FOMC).
24 January	The Société générale reveals the fraud committed by one of its traders, Jérôme Kerviel, who lost the bank EUR 4.9 billion.
30 January	The Fed lowers its key rate by 0.50% to 3%.
15 February	UBS reports losses of EUR 7.8 billion in the fourth quarter.
17 February	The British government nationalises Northern Rock.
11 March	The Fed sets up the Term Securities Lending Facility (TSLF). This 28-day facility allows primary dealers to borrow Treasury securities secured by a pledge of assets of a lower credit quality (Federal agency debt, mortgage-backed securities — MBS, etc.).
16 March	The Fed increases the maximum maturity of term from 30 days to 90 days. It introduces a new facility, the Primary Dealer Credit Facility, to provide funding to primary dealers in exchange for any tri-party eligible collateral.
18 March	The Fed lowers its key rate by 0.75%, to 2.25%.
24 March	Bear Stearns is taken over by JP Morgan, backed by funding from the Fed to the tune of USD 30 billion.
28 March	The ECB introduces a supplementary longer-term refinancing operation (LTRO) with a maturity of six months.
1 April	UBS announces a doubling of its writedowns that stand at EUR 24 billion at this date.
30 April	The Fed lowers its key rate by 0.25%, to 2%.
June - August	Three US investment banks (Lehman Brothers, Merrill Lynch and Morgan Stanley) and two monoline insurers (MBIA and Ambac) see their ratings downgraded.

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2008	
7 September	The US Treasury bails out mortgage agencies Freddie Mac and Fannie Mae, bringing them into public ownership. It also sets up a lending facility of up to USD 200 billion if required.
15 September	Lehman Brothers files for bankruptcy. Bank of America announces its acquisition of Merrill Lynch.
16 September	The Fed and US government effectively nationalise AIG, which is threatened with bankruptcy, providing an USD 85 billion credit facility in return for an ownership share of 79.9% in the company.
18 September	The UK bank Lloyds TSB takes over its failing competitor HBOS. The European Central Bank, the Federal Reserve, the Bank of England, the Bank of Japan, the Swiss National Bank and the Bank of Canada set up a new US dollar Overnight Auction Facility which will be renewed until 15 october.
19 September	President George W. Bush announces a rescue plan for US Banks (Paulson Plan). The Fed launches a new facility aiming to support money market funds.
25 September	President Nicolas Sarkozy calls for a new global financial order. JP Morgan takes over the deposits of failed Washington Mutual.
26 September	The share price of Fortis nose-dives due to doubts concerning its solvency. Fortis is bailed out on 29 September by the governments of Belgium, the Netherlands and Luxembourg. BNP Paribas takes over its operations in Belgium and Luxembourg for EUR 14.5 billion.
29 September	The US House of Representatives rejects the Paulson Plan. The German government and a consortium of German banks bring a EUR 35 billion credit guarantee to Hypo Real Estate, the country's fourth largest bank. The banks Bradford & Bingley (in the United Kingdom) and Glitnir (in Iceland) are nationalised.
30 September	The Irish government guarantees all deposits until 2010 for the country's six major banks. The governments of Belgium, France and Luxembourg bail out Dexia in the amount of EUR 6.4 billion by subscribing to a capital increase.
3 October	The list of counterparties eligible for the Eurosystem's fine-tuning operations is extended. The Paulson Plan is adopted by the House of Representatives.
5 October	New rescue plan for Hypo Real Estate.
7 October	The Fed announces the creation of the Commercial Paper Funding Facility.
8 October	Coordinated interest rate cut by several central banks: the Fed, the ECB, and the central banks of Canada and Sweden cut their key rates by 0.50% and the Swiss National Bank by 0.25%. The ECB announces that the weekly main refinancing operations would be carried out through a fixed-rate tender procedure with full allotment until January 2009 and that it will reduce the corridor of standing facilities. The EU Finance Ministers decide to raise from EUR 20,000 to EUR 50,000 protection for deposits. By at latest 31 December 2010, they welcome the proposed increase in the total amount of protected deposits to EUR 100,000.
9 October	The ECB reduces the corridor of standing facility rates from 200 basis points to 100 basis points around the prevailing interest rate of the main refinancing operation: the rate of the marginal lending facility is reduced from 100 to 50 basis points above the interest rate on the main refinancing operation, i.e. currently to 4.25%, and the rate of the deposit facility is brought from 100 to 50 basis points below the interest rate on the main refinancing operation, i.e. currently to 3.25%.
10 October	The G7 adopts an international action plan to ensure the stability of the financial system, support systemically important financial institutions and prevent their failure, ensure that banks and other financial institutions have broad access to liquidity and funding, ensure that national deposit insurance and guarantee programmes are robust and consistent so that retail depositors will continue to have confidence in the safety of their deposits and take action, where appropriate, to restart the secondary markets for mortgages and other securitised assets. For this, accurate valuation and transparent disclosure of assets and consistent implementation of high quality accounting standards are necessary.
12 October	At the initiative of President Nicolas Sarkozy, a pan-European plan is adopted to fight the crisis: protect savers, ensure the financing of the economy and prevent the failure of systemic financial institutions.

.../...

2008	
13 October	The French government announces its plan to restore confidence in the country's banking system and facilitate the financing of the economy. The ECB announces that the amount provided through the term auction facility (TAF) will be unlimited and fixed-rated allotted. The same measure is implemented by the Bank of England and the Swiss National Bank. The Fed announces unlimited swap lines with these central banks.
15 October	The ECB expands its collateral framework (marketable debt instruments in certain foreign currencies, certificates of deposits, subordinated marketable debt instruments that are protected by an acceptable guarantee, syndicated loans under English law) and lowers the credit threshold for eligible securities from A- to BBB. The Swiss National Bank and the ECB announce cooperation to provide Swiss franc liquidity.
16 October	The ECB and Magyar Nemzeti Bank (Central Bank of Hungary) establish an agreement on repurchase transactions, which will provide the MNB with a facility to borrow up euros in order to provide additional support to the MNB's operations. The Swiss authorities announce a plan to rescue UBS, which combines government recapitalisation (USD 5 billion) and the creation by the Swiss National Bank of a fund for toxic debt.
17 October	The Minister of the Economy, Industry and Employment, Christine Lagarde, appoints the board of directors of the Société de financement de l'économie française (SFEF).
20 October	The six largest French banking groups (Banques populaires, BNP Paribas, Caisses d'Épargne, Crédit agricole, Crédit mutuel et Société générale) will receive an initial injection of EUR 10.5 billion of Tier 1 capital in the form of subordinated debt securities.
23 October	President Nicolas Sarkozy announces a meeting of the G20. The pledge of EUR 26 billion in loans for financing French SMEs and the appointment of a national credit mediator, René Ricol, are also announced.
27 October	The ECB and Danmarks Nationalbank establish a reciprocal currency arrangement (swap line) amounting to EUR 12 billion.
28 and 29 October	The Fed authorises the establishment of temporary liquidity swap facilities with the Banco de Mexico, the Banco Central do Brasil, the Bank of Korea and the Monetary Authority of Singapore. The Fed lowers its key rate by 0.50%, to 1%. The IMF announces the creation of a short-term lending facility for emerging markets.
31 October	The Bank of Japan lowers its key rate by 0.2% to 0.3%.
4 November	The SFEF launches its inaugural three-year public euro-denominated bond.
6 November	The ECB lowers its key rate by 0.50%, to 3.25%. The Bank of England lowers its key rate by 1.50% to 3%.
9 November	China announces a stimulus package valued at CNY 4,000 billion (EUR 470 billion).
15 November	The G20 publishes a declaration in which it reiterates the intention of its members (including the large emerging countries) to act swiftly to deal with the global economic slowdown and establish a roadmap to draw lessons from the financial crisis.
20 November	President Nicolas Sarkozy announces the creation of the Strategic Investment Fund (FSI), aimed at strengthening firms' equity capital and increasing the protection of strategic French companies' capital.
23 November	President-elect Barack Obama commits to implementing a stimulus package as soon as he takes office on 20 January. This package could amount to USD 1,000 billion. The US government provides a guarantee of USD 306 billion to Citigroup, and injects a further USD 20 billion of Tarp funds.
25 November	The Fed launches a new facility called TALF (Term Asset-Backed Securities Loan Facility). The facility amounts to up to USD 200 billion with the possibility of it being raised to USD 1,000 billion.

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2008	
2 December	A European economic recovery plan amounting to EUR 200 billion (1.5% of GDP) is approved by the European Heads of State.
4 December	Nicolas Sarkozy unveils a EUR 26 billion plan to kick-start the economy (1.3% of GDP). The ECB cuts its key rate by 75 basis point to 2.50%. The Bank of England cuts its key rate from 3% to 2%.
10 December	The White House and Congress agree on a USD 13.4 billion bailout plan of car manufacturers.
11 December	Bernard Madoff is arrested by the FBI for a suspected Ponzi scheme totalling USD 50 billion. The French Financial Markets Authority (AMF) estimates the exposure of French investment funds at EUR 500 million in the wake of the Madoff affair.
16 December	The Fed lowers its key rate by 0.75%, to 1%, bringing the federal funds rate to a range of 0 to 0.25%.
19 December	The Bank of Japan cuts its key rate by 0.20% to 0.10%
29 December	After granting it a 3-month loan of USD 13.4 billion in mid-December, the US Treasury bails out GMAC with a further USD 5 billion.
2009	
5 January	The Fed launches a plan to prop up the housing market by buying mortgage-backed securities.
7 January	Nicolas Sarkozy announces a second recapitalisation tranche for French banks, following the first in December (EUR 10.5 billion in hybrid capital).
8 January	The German government announces the partial nationalisation of Commerzbank. In concrete terms, the Financial Market Stabilisation Fund (SoFFin), set up in October to provide support to the banking sector, lends an additional EUR 10 billion to Commerzbank. The State purchases 295 million of new common stock and injects EUR 8.2 billion into the bank, becoming its largest shareholder. Moody's downgrades Bank of America's issuer rating and that of its senior debt by a notch, due to the "major difficulties that Bank of America and Merrill Lynch would probably face in the coming years". The Bank of England lowers its key rate by 50 basis points, to 1.5%, its lowest level in the Bank's 315-year history. In France, the recovery plan is adopted by the National Assembly.
13 January	Second economic recovery plan in Germany totalling EUR 50 billion, which includes tax cuts, decreases in social contributions, investment grants, a EUR 100 one-off bonus for each child and support for the automobile sector.
14 January	Deutsche Bank reports a loss of EUR 4.8 billion for the fourth quarter of 2008, and a loss of EUR 3.9 billion for 2008 as a whole. The British government unveils a plan to guarantee up to GBP 20 billion of short-term loans to small and medium-sized entreprises (SMEs) to encourage banks to finance them. It also offers a special guarantee of GBP 1 billion for long-term loans taken out by SMEs.
15 January	The ECB cuts its key rate by 50 basis points to 2%. The interest rate of the marginal lending facility is increased from 50 to 100 basis points above the interest rate on the main refinancing operation, i.e. currently to 3% and the rate of the deposit facility is reduced from 50 to 100 basis points below the interest rate on the main refinancing operation, i.e. currently 1%. The corridor of standing facilities is set at 200 basis points.
16 January	Citigroup reports a net loss of USD 8.29 billion for the fourth quarter of 2008. The US government guarantees USD 118 billion in Bank of America debt and injects USD 20 billion into its capital.
19 January	In France, presentation of the Deletré Report that advocates a merger between the Commission Bancaire and the Autorité de contrôle des assurances et des mutuelles (supervisors of banks and insurance companies respectively). RBS reports anticipated losses of up to GBP 28 billion. The British government's stake in this bank increases from 58% to 70%. The Prime Minister announces a new wave of measures aimed at banks, in particular the implementation of a special fund with assets of GBP 50 billion for purchasing high-quality private sector assets, i.e. commercial paper and bonds, and the creation of a guarantee system for securitised products.
20 January	The French government agrees to support the car manufacturers Renault and PSA to the tune of EUR 5-6 billion. Hypo Real Estate, already rescued from bankruptcy by the State, announces that it will receive a further State guarantee of EUR 12 billion, bringing total government aid to EUR 42 billion. US antitrust authorities authorise Dexia's sale of its subsidiary Financial Security Assurance (FSA).

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2009	
21 January	In France, publication of the conditions of the new recapitalisation plan for French banks: the second plan resembles that of December. Identical amount (EUR 10.5 billion), identical conditions, eligible to be treated as Tier One and Core Tier One capital (with the first recapitalisation, securities were only eligible for Tier one).
26 January	The French government announces the release of EUR 5 billion to support Airbus via the SFEF. BNPP posts a profit of EUR 3 billion in 2008 and a loss of EUR 1.4 billion in the fourth quarter of 2008. The Icelandic Prime Minister announces its government's decision to resign under pressure from its people who deem it responsible for the collapse of the economy.
29 January	The US House of Representatives adopts the recovery plan proposed by the government (USD 819 billion).
5 February	The Bank of England cuts its key rate by 50 basis points to 1%. A "Japanese Madoff", Kazutsugi Nami, is arrested for fraud after amassing between EUR 1-2 billion from his Ponzi scheme. In the United States, annual gross compensation of CEOs whose companies benefit from State aid is expected to be capped at USD 500,000.
11 February	UBS and Crédit Suisse report historical losses of EUR 13.3 billion and EUR 5.5 billion respectively for 2008.
12 February	KBC posts a net loss of EUR 2.5 billion for 2008. Hypo Real Estate Holding announces that the SoFFin is raising its guarantee by EUR 10 billion. This brings the German State's guarantee of Hypo Real to a total of EUR 52 billion.
13 February	The US Congress adopts the USD 787 billion economic recovery plan (5.5% of GDP). HBOS reports a loss of EUR 12.4 billion in 2008. The Bank of England (BoE) starts purchasing commercial paper on the primary and secondary markets. The German Parliament adopts the EUR 50 billion economic recovery plan.
18 February	The US government unveils USD 275 billion housing plan aiming to help 7 to 9 million households. The plan allocates USD 75 billion to a stabilisation fund to help refinance the loans of 4-5 million "responsible homeowners".
26 February	Publication of the Larosière report on banking supervision. The European Commission publishes guidelines for the treatment of toxic assets. Natixis reports a EUR 2.8 billion net loss in 2008. The merger between Caisses d'Épargne and Banques populaires is officially announced. RBS reports a loss of GBP 24.1 billion in 2008, the highest ever incurred by a British company. It places GBP 325 billion of risky assets into a new government insurance programme. Fannie Mae reports a loss of USD 59 billion for 2008, mainly due to extraordinary items in the second half of the year, and asks the Treasury for USD 15.2 billion to cover its debts.
3 March	AIG reports a historical loss for a US firm of USD 99.3 billion for 2008. The US Treasury injects USD 30 billion and organises its restructuring (second rescue plan).
5 March	The European Central Bank and the Bank of England cut their key rates by 50 basis points to 1.50% and 0.50% respectively. The Bank of England launches a GBP 100 billion programme for outright purchases, over a three-month period, of private sector assets and gilts.
6 March	Fortis holding, BNP Paribas and Société fédérale de participations et d'investissement reach an agreement to be submitted at the next shareholder general meetings.
8 March	Lloyds Banking Group is 65% nationalised. It is the fourth bank to be nationalised in the United Kingdom after Northern Rock, Bradford & Bingley and RBS.
11 March	Freddie Mac reports an annual net loss of USD 50.1 billion.
13 March	The Temporary Liquidity Guarantee Program (TLGP) is extended for issuance up to 31 October 2009 and guaranteed until 31 December 2012.
17 March	AIG discloses counterparties to CDS, GIA and securities lending transactions between 16 September and 31 December 2008 including: Goldman Sachs (USD 12,9 billion), Société générale (11.9), Deutsche Bank (11.8), Barclays (7), Merrill Lynch (6,8), BNPP (4.9), Calyon (2.3).

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2009	
18 March	The Fed announces unprecedented quantitative easing measures. The monetary policy committee undertakes to purchase up to USD 300 billion in long-term Treasury securities over the following six months. Immediately, the 10-year bond yield slides from 3% to 2.5%. The plan also includes an additional USD 750 billion earmarked for the purchase of mortgage-backed securities – bringing the total of these purchases to USD 1,250 billion. Lastly, the Fed allocates an additional USD 100 billion to purchase Fannie Mae and Freddie Mac debt. The Bank of Japan unveils a USD 10 billion bank rescue plan in the form of subordinated loans to large commercial banks.
23 March	In the United States, presentation of the Public-Private Investment Program to cleanse banks' balance sheets. All toxic assets will be transferred to an autonomous entity operating in partnership with the Fed and the FDIC (body guaranteeing the safety of deposits). Initially, USD 500 billion is allocated to this plan, with a possible further USD 1,000 billion if required. The IMF forecasts global GDP growth of 0.5% to 1% in 2009, which would be the greatest contraction in 60 years.
28 March	The German governement commences the process of nationalising Hypo Real Estate.
29 March	Banco de España and the government have to bail out for the first time since the start of the crisis a financial institution: Caja de Ahorros de Castilla La Mancha.
2 April	The ECB cuts its key rate by 25 basis points to 1.25%. This G20 summit results in a number of measures on the regulation as well as the resources of multilateral organisations: announcement of a USD 1,100 billion programme aimed at stimulating economic growth, trade and employment at the global level; IMF resources are tripled.
6 April	New USD 90 billion Japanese stimulus package.
13 April	Goldman Sachs reports a net profit of USD 1.81 billion in the first quarter. Wells Fargo announces that it will report a first-quarter profit of USD 3 billion.
28 April	Almost 73% Belgium shareholders approve the sale of Fortis to BNP Paribas; 77% of Dutch shareholders follow suit on 29 April. BNP Paribas acquires the Belgian bank for EUR 8.25 billion.
29 April	The European Commission presents a draft directive on Alternative Investment Fund Managers.
30 April	According to the IMF's Global Financial Stability Report, European banks (excluding the United Kingdom) are expected to face potential writedowns of USD 1,100 billion, compared with USD 1,050 billion for their US peers.
7 May	Société générale reports a net loss of EUR 278 million in the first quarter. The ECB cuts its key interest rate by 25 basis points to 1% and the corridor of standing facilities is reduced to 150 basis points around the prevailing interest rate of the main refinancing operation. The rate on the deposit facility is brought to 0.25% and the interest rate on the marginal lending facility is set at 1.75%. The ECB creates a one-year longer-term refinancing operation, with an initial rate of 1% and launches a programme to purchase covered bonds for an amount of EUR 60 billion (representing around 4% of the market outstanding, i.e. EUR 1,500 billion). The European Parliament adopts amendments to the Capital Requirements Directive (CRD – Basel II directive), which requires credit institutions to retain a net economic interest of not less than 5 per cent of the securitised products they originate, as of 31 March 2010. GBP 50 billion increase in the Asset Purchase Facility of the Bank of England to GBP 125 billion. The SoFFin announces its plan to nationalise Hypo Real Estate after increasing its share in the company to 47.31%. Berlin uses its stake to push through a capital increase. The US Treasury Department and the Fed publish the results of the stress tests. Nine banks were deemed to be sufficiently capitalised to weather the crisis without incident. The additional capital required by 10 of the top 19 banks comes to USD 75 billion. Over the period 2009-2010, the Fed projects that the credit losses of these banks could reach USD 600 billion, but that they would partly be absorbed by the positive operating income generated over this period.
8 May	Commerzbank reports a net loss of EUR 861 million in the first quarter of 2009. RBS, in which the government holds a 70% stake, reports a net loss of GBP 857 million in the first quarter.
18 May	The Financial Accounting Standards Board adopts two new accounting rules requiring financial institutions to keep more off-balance sheet assets on their books. These rules will come into force in early 2010.

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2009	
19 May	The Fed announces that certain high-quality CMBS (AAA rated and issued before 1 January 2009) would become eligible under the TALF programme. Previously, only new CMBS had been eligible. By doing this, the Fed intends to improve the liquidity of CMBS by helping potential buyers to finance them.
20 May	The largest bank failure in the United States (the 34th of the year compared with 25 in 2008) since the start of the year: Bank United FSB, in Florida.
27 May	The European Commission presents proposals for reinforcing the highly fragmented financial supervision in Europe and learning lessons from the crisis. In the light of the Larosière report, the Commission suggests the creation of a "European Systemic Risk Board", charged with macroprudential surveillance.
1 June	General Motors files for Chapter 11 bankruptcy protection. Having given USD 19.4 billion since December, the Treasury grants an additional USD 30.1 billion, making it the biggest shareholder with a stake of 60%.
4 June	The ECB gives details of its covered bond purchase programme, announced on 7 May.
8 June	Citigroup starts its plan to convert USD 58 billion in preferred stock into common stock, which could give the US government a 34% stake in its capital. According to the OECD, the rate of decline of the largest economies slowed down.
9 June	The International Accounting Standards Board (IASB) steps up the reform of IAS 39 with a view to its application to the accounts of banks and insurance companies by end-2009. The US Treasury department authorises ten of the country's largest banks to repay up to USD 68 billion in State aid received since the autumn in the framework of its financial system stabilisation plan.
17 June	JP Morgan and Morgan Stanley announce that they have repaid State financial aid amounting to USD 25 billion and USD 10 billion respectively. US Bancorp and BB&T, for their part, repay part of the public funds received. Repayments by American Express and Goldman Sachs are expected. President Obama calls for a "new foundation" for financial regulation in the United States.
25 June	The Fed extends until February 2010 (from October 2009) some of its liquidity providing facilities and certain swap lines with other central banks. The ECB conducts its first12-month longer-term refinancing operation providing EUR 442 billion at a rate of 1% to banks. This operation attracted the participation of 1,121 financial institutions.
29 June	The New York financier Bernard Madoff is sentenced to 150 years of prison for the largest Ponzi scheme of all times. Setting up of a EUR 9 billion rescue fund for distressed regional banks in Spain, to be used for capital injections and to support the sector's consolidation.
30 July	The IMF announces measures to boost the fund's concessional lending capacity by up to USD 17 billion between July 2009 and 2014 and suspends interest on some loans to low-income countries. It also plans to sell part of its gold stock.
6 August	The Bank of England injects an additional GBP 50 billion into the economy within the framework of its quantitative easing measures, bringing its total asset purchases to GBP 175 billion. Interest rates remain on hold at 0.5%.
10 August	The Financial Services Authority (FSA) announces that it is to publish a code setting out banks' obligations concerning their policies on compensation practices.
26 August	In a speech, Nicolas Sarkozy calls for the new international rules on bonuses to be respected.
15 September	Fed chairman, Ben Bernanke, states that the recession in the United States is probably over. Bank of England Governor, Mervyn King, states that the UK economy is growing again. However, much uncertainty surrounds the strength and sustainability of the recovery due to the state of the banking sector and the level of debt.
24 and 25 September	G20 Pittsburgh Summit. The different countries come to an agreement on new rules to limit the risk of financial crisis. The G20 officially becomes the forum for discussing and addressing issues relating to international finance.
1 October	In its Financial Stability Report, the IMF forecasts that banks and financial institutions worldwide will face USD 3,400 billion in writedowns, down from the USD 4,000 billion estimated in April 2009; for banks, USD 1,300 billion through the first half of 2009, and additional writedowns of USD 1,500 billion ahead.

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2009	
Early October	A number of French banks announce the repayment of super-subordinated securities and preference shares taken up by the Société de prise de participation de l'État (SPPE) as part of measures taken to support the banking sector.
2 October	Publication of the results of European stress tests conducted on 22 major banks.
20 October	The US regulator ends the Temporary Liquidity Guarantee Program, which allowed US banks to benefit from government guarantees for issuance until end-2012. However, a 6-month safety feature whereby institutions could continue to benefit from State guarantees for this period was left open.
22 October	The FSA proposes to apply a capital surcharge to systemically important banks.
26 October	The European Commission requires ING, in return for State aid, to divest all insurance and asset management activities by end-2013 through a combination of sales and initial public offerings (equal to 45% of its balance sheet).
29 October	The Fed completes its USD 300 billion Treasury Purchase Program.
2 November	The European Commission approves the prolongation of guarantees granted by Belgium, France and Luxembourg on Dexia's debt to 31 October 2010 whereas this guarantee was initially supposed to run until February 2010. This measure was deemed justifiable due to the Group's financial situation and its systemic importance for the economies of these three Member States.
5 November	In France is published an order about compensation practices. Targeted figures are presented in the form of professional standards for the industry, applicable as of 2009 for bonuses paid as of the start of 2010. They reflect the principles adopted by the G20: submission of a report each year to the Commission bancaire on compensation practices; guaranteed bonuses should be avoided other than when hiring new staff; at least 50% of bonuses should be in the form of deferred compensation (and more than 50% of variable compensation should be awarded in shares).
12 November	IASB issues IFRS 9 establishing a more consistent framework for the classification and measurement of financial assets. Its main points are: • If a derivative is attached to a financial instrument, the same accounting method is applied to the two assets. • Instead of the four classifications available under IAS39, there will only be 2 choices now: amortised cost or fair value.
24 November	The Bank of England reveals that it had secretly provided RBS and HBOS with GBP 61.6 billion when the crisis was at its height in mid-October 2008.
25 November	Announcement of the restructuring of state-owned giant Dubai World, which temporarily spooked the financial markets.
16 December	ECB lends EUR 96.9 billion in its final 1-year refinancing operation (VLTRO), at the top end of expectations. 224 banks took part in this operation.

ABCP (asset-backed commercial paper)
Negotiable debt security for which the payment of interest and capital derive from the cash flows of a portfolio of underlying assets.

ABCP conduits
Off-balance sheet securitisation vehicles whose purpose is to refinance different types of bank asset via commercial paper with a maturity of less than one year.

ABS (asset-backed security)
Security backed by a portfolio of financial assets excluding mortgage loans (consumer loans, credit card receivables, etc.). Cash flows are based on the cash flows of the portfolio of underlying assets. They are one of the most common types of securitised products.

Arbitrage
Operation that consists in taking advantage of "abnormal" price differentials between different markets. Arbitrage theoretically makes it possible to make a "risk-free" profit and contributes to market efficiency.

Auction rate security (ARS)
Debt instrument with a long-term nominal maturity for which the interest rate is regularly reset through a Dutch auction and issued by local authorities, public entities and paragovernmental entities.

Basel I (Accord)
Prudential framework established in 1988 by the Basel Committee in order to ensure the the solvency and stability of the international banking system by setting a minimum level for the capital held by banks. In particular, it sets in place a minimum capital adequacy ratio of banks' total exposures of 8%.

Basel II (Accord)
Prudential framework designed to better assess and limit the risks faced by credit institutions. It aims primarily to deal with banks' credit risk, market risk and operational risk. Its provisions were drawn up by the Basel Committee, were transposed in Europe into a European directive, and came into force in France on 1 January 2008.

Basel Committee on Banking Supervision
Committee that brings together the central bankers of the G20 countries under the aegis of the Bank for International Settlements in Basel. It meets four times a year and its mandate covers four areas: strengthening the safety and reliability of the financial system; establishing minimum standards for prudential supervision; disseminating and promoting best banking and supervisory practices; and promoting international cooperation in the area of prudential supervision.

Basis point
A basis point corresponds to one hundredth of a percentage point, i.e. 0.01% or 0.0001.

BIS (Bank for International Settlements)
Set up in 1930, the BIS is an international organisation charged with promoting international monetary and financial cooperation. It also plays the role of the bank of central banks. Its remit comprises three aspects: it acts as a forum for discussion and analysis of central banks' monetary policies, a centre for economic and monetary research, a primary counterparty for central banks in their international transactions and a financial agent. It gathers together 56 central banks, including those of the G10 countries. Several committees and organisations dedicated to monetary and financial stability or the international financial system come under its aegis, such as the Basel Committee and the CGFS, or have their secretariat in its premises.

Capital
Equity capital of a company plus its retained earnings. A company's capital equals the difference between the value of its total assets and that of its financial and operating liabilities. Prudential regulation is involved in setting prudential equity standards.

CDOs (collateralised debt obligations)
Debt securities issued by securisation vehicles and composed of several securities (ABSs, CDOs or bonds). CDOs provide liquidity for securities that are not automatically liquid.

CDPC (credit derivative product company)
Vehicle specialising in selling credit default protection in the form of credit derivatives to financial institutions. The specific characteristics of these vehicles (mainly exposed to corporate risk, absence of collateral mechanisms in derivatives contracts) explain why they were affected at a later stage by the crisis that followed the failure of Lehman Brothers.

CDS (credit default swap)
Bilateral financial contract by which a buyer of protection periodically pays a premium to a seller of protection, who promises to compensate for losses on a reference asset (debt securities issued by sovereigns, financial institutions or corporations) should a credit event occur (bankruptcy, failure to pay, moratorium, restructuring, etc.). It is a mechanism for insuring against credit risk.

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CGFS (Committee on the Global Financial System)
The CGFS is a committee of the Bank for International Settlements charged with monitoring financial markets. It is made up of the governors of the central banks of the 20 participating countries (the G20). The CGFS has a mandate to identify and assess potential sources of stress in the markets, to further the understanding of the structural mechanisms that determine their evolution and to promote the improvement of their functioning.

Certificate of deposit
Negotiable debt security issued by a bank with a maturity of less than one year.

CMBS (commercial mortgage-backed security)
Security backed by a portfolio of mortgage loans linked to the financing of non-residential real estate (cf. ABSs).

Collateral
Transferable asset or guarantee pledged against repayment of a loan in the event of the beneficiary of the latter being unable to honour his payment obligations.

Commercial paper
Notes with a maturity ranging from one day to one year issued by a company to obtain short-term funding. Issuing companies must fulfil certain rating conditions to prove that they are financially sound and solvent.

Covered bond
Bond for which the repayment and interest payments are funded by cash flows from an asset portfolio that serves as collateral, often a portfolio of mortgage loans. This product, however, remains largely confined to financial institutions.

Credit derivative
Financial product whose underlying is a claim or security representing a claim (bond). The purpose of credit derivatives is to transfer the risks associated with the credit without transferring the asset itself. One of the most common forms of credit derivative is the credit default swap.

Deleveraging
Reduction in banks' leverage, which can occur in different ways (sale of assets, recapitalisation, slowdown in the supply of credit). This process of financial adjustment can ultimately have a negative impact on the real economy, particularly if it entails a contraction in credit supply.

Derivative
Financial product whose value derives from that of an underlying. There are outright derivatives (interest rate swap, currency swap) and optional derivatives (options, warrants, etc.). These products can be traditional (plain vanilla) or exotic.

Derivatives markets
Markets that make it possible to manage the risks associated with fluctuations in asset prices and interest or exchange rates and allow large buying or selling positions with limited investment. Futures and options markets are examples of derivatives markets (see Derivative).

EONIA (Euro overnight index average)
Interbank rate offered by prime banks to one another for the remuneration of deposits in the euro area. It is calculated as a weighted average of all of the interest rates on interbank overnight lending of a panel of 57 banks (the EURIBOR panel). Overnight lending means that funds are made available on the same day and repaid the following day.

Equity tranche
In a securitisation structure, refers to the tranche that bears the first losses due to defaults within the underlying portfolio.

EURIBOR (Euro Interbank Offered Rate)
Rate at which interbank term deposits in euro are offered by one prime bank to another within the euro area. Each morning, a panel of 57 banks provides quotations for different maturities (1, 2, 3 weeks, 1, 2, ... 12 months). The EURIBOR is calculated as the average of the quotations given by banks, after eliminating 15% of the highest quotations and 15% of the lowest.

FOMC (Federal Open Market Committee)
The FOMC is a committee of the US Federal Reserve System, which is made up of 12 members. It holds eight meetings a year, at which the Committee reviews economic and financial conditions, determines the outline of US monetary policy, and assesses the risks for financial stability and economic growth.

Gross public debt
Measure of public debt whereby financial assets (in particular government stakes in public companies) or the value of other assets owned by the State (buildings, work of art, etc) are not deducted.

Hedge funds
Unlisted speculative investment funds that seek to deliver absolute returns and to this end use a wide range of asset management strategies.

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Hysterisis
Persistence of an economic phenomenon when its main cause has disappeared. First employed by neoclassical economics, hysterisis is a way of explaining a medium-or long-term phenomenon that has no obvious explanation, particularly in relation to unemployment and inflation.

IFRS (International Financial Reporting Standards)
Accounting standards issued at the international level by the International Accounting Standards Board and aimed at listed or publicly held companies in order to harmonise the presentation and clarity of their financial statements.

Investment funds/UCITS (Undertaking for Collective Investment in Transferable Securities)
Entity that manages a portfolio whose funds are invested in transferable securities. There are two major types of French investment fund/UCITS: investment companies with variable capital (SICAV) and mutual funds.

Leverage
Leverage measures the level of debt taken on by a household, company or financial institution in order to acquire a property or asset.

LIBOR (London interbank offered rate)
Money market rate used in London which is calculated as the arithmetic average of the rates offered on the London interbank market for a specified maturity (1-12 months) and a given currency (euro, pound sterling, dollar, etc.).

Liquidity
For a bank: its ability to meet its short-term financial obligations. For an asset: the ability to buy or sell it quickly on a market with a limited discount.

Money market
Market for the refinancing of banking entities and other financial players. It allows these entities to secure the short- or medium-term financing that they need.

Mark-to-market
Method that values an asset at its current market value. By contrast, in "historical cost" valuation the asset remains valued at the price it was purchased for, even if its market value has changed in the meantime.

Mark-to-model
Fair value is determined using a statistical model based in particular on the discounting of anticipated future cash flows.

MFIs (monetary financial institutions)
Credit and financial institutions whose business is to receive deposits, to grant credit and/or invest in securities. The resident MFIs in France are the Banque de France, credit institutions as defined in French banking law (with the exception of mutual guarantee societies), the Caisse des Dépôts et Consignations, money market funds and the Caisse Nationale d'Épargne.

Monoline insurers
Insurers that guarantee debt securities issued by third parties in exchange for a fee, which allows these players to obtain lower interest rates and higher ratings on their debt (e.g. MBIA, Ambac, FGIC).

Off-balance sheet
Refers to all of a company's rights and obligations other than those that must be recorded in the balance sheet and profit and loss account. The main off-balance sheet commitments relate to financial guarantees, credit lines granted, instruments used to manage interest rate and exchange rate risk and asset and liability guarantees when a company is being sold.

OIS (Overnight Index Swap)
Type of interest rate swap generally with a maturity of 1 week to 1 year. The floating rate is linked to the benchmark overnight rate. The two counterparties agree to swap at maturity, on an agreed notional amount, the difference between the interest accrued at a fixed rate and the interest accrued at the floating rate by capitalisation.

Originator
In a securitisation structure, refers to the entity (mostly a bank) that sells financial assets and/or credit risk to a vehicle.

Over-the-counter market
Decentralised market in which bilateral transactions of financial products are carried out between two counterparties, in contrast to formal (or regulated) markets.

Permanent interest-bearing shares (PIBS)
Securities issued by building societies that pay a fixed rate of interest.

PMI (Purchasing Manager Index)
Composite indicator of a country's manufacturing activity. It is expressed as a percentage and includes order books, output, the employment level, supplier deliveries and inventories in the manufacturing sector. A value below 50% indicates a contraction of the sector, while a value above 50% points to its expansion.

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Preference shares
Shares that can give investors the right to financial or political advantages (increased dividends, a particular right of control, etc.), and for which the rules regarding their repurchase may be specific.

Rating
Assessment by a financial rating agency (Moody's, Fitch Ratings, Standard & Poor's) of the financial solvency risk of a company, government or other public administration, or of a given operation: debt issuance, securitisation, etc. Ratings have a direct impact on the cost of raising capital.

Rating agency
Entity specialising in the assessment of the solvency of issuers of debt securities or their ability to meet their obligations (repayment of principal and interest).

Reintermediation
Illustrates the limitations of securitisation, with banks having ultimately to bear the risks associated with assets removed from the balance sheet in the light of the different linkages i) contractual (liquidity lines, credit guarantees) and ii) non-contractual (reputational risk) that exist between the bank and the securitisation vehicle.

RMBS (residential mortgage-backed security)
Security backed by portfolio of mortgage loans linked to the financing of residential real estate (see ABSs, CMBSs).

Securitisation
Financial technique making it possible to convert claims recorded on the asset side of a credit institution's balance sheet (mortgage loans, for example) into negotiable securities. Claims are aggregated into homogenous pools according to their maturity and risk. These pools are sold to a securitisation vehicle, units of which are then sold to investors in the form of bonds. This allows banks to reduce the size of their assets and to mechanically improve their solvency ratios and to recover margins enabling them to provide fresh lending. Interest payments and repayment of the principal are made from the financial flows generated by the original loans.

SIV (structured investment vehicle) or conduit
In a securitisation operation, designates the special purpose vehicle with a fixed lifespan whose function is to hold the portfolio of underlying assets and to issue securities backed by this portfolio. The operation is mainly based on a maturity mismatch (long-term asset, short-term financing).

Solvency
A company's ability to meet its financial obligations at any moment, including long-term ones.

SDR (Special Drawing Right)
The Special Drawing Right (SDR) was created by the IMF in 1969. The SDR is neither a currency, nor a claim on the IMF. Rather, it is a potential claim on the freely usable currencies of IMF members. Holders of SDRs can obtain these currencies in exchange for their SDRs in two ways: first, through the arrangement of voluntary exchanges between members; and second, by the IMF designating members with strong external positions to purchase SDRs from members with weak external positions. In addition to its role as a supplementary reserve asset, the SDR serves as the unit of account of the IMF and some other international organisations. Its value is calculated on the basis of a basket of currencies, which currently comprises the US dollar, the euro, pound sterling and the yen.

Spread
Differential between the interest rate on a risky investment and the interest rate on an investment deemed to be risk-free (US Treasuries, for example).

Stock option
Right given to an employee or executive to buy shares in their company at a specified price, called the strike price, within a set time period. When the employee exercises his option, he buys the stock at the strike price mostly to sell it again immediately on the stock market and to pocket the profit. In the event of the stock market falling, it is obviously not in the holder's interest to exercise his option.

Structured product
Product designed by a bank to meet its customers' requirements often comprising a complex combination of options, swaps, etc. based on unlisted parameters and using various complex financial engineering techniques including securitisation. Its price is determined using mathematical measurements that model the product's behaviour on a time-dependent basis and according to market developments.

Subordinated securities
Securities that have lower priority than others in terms of repayment with respect to a borrower.

Subprime
In the United States, subprime mortgages are mortgage loans granted to households with a poor credit history, in contrast to the prime loans granted to households deemed creditworthy.

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Swap
Over-the-counter agreement concluded between two parties to exchange assets or revenues from an asset for those from another up to a specified date. The two counterparties may exchange currencies, interest rates, and so on.

Tier one (ratio)
Tier one refers to the portion of a financial institution's prudential capital that is deemed to be the most sound. Equity capital and retained earnings are notably included in Tier one. The ratio of Tier one to total risk-adjusted assets is an indicator of solvency used in the Basel I and Basel II accords.

Volatility
Volatility measures the magnitude of the fluctuations in the price of an asset and therefore its risk. It corresponds to the standard deviation of the instantaneous returns on the asset over a given period

Writedown
In accounting, the allocation of a probable loss on an asset.

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