

The global crisis: Challenges to the banking system

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Abstract. *After the 2008 crisis, the tasks of economic policies and the institutions' structure underwent many changes both at world economy and European level. The paper focuses on the banking system stability, the effects of the fast pre-crisis leveraging and the fast post-crisis deleveraging, and their impact on the banking system. The most relevant methods used in this field deal with the analysis of banking sector-oriented economic policies adopted during the crisis, on the one hand, and the analysis of indicators assessing the crisis fallout on the banking sector, on the other hand.*

Keywords: banking system; financial and economic crisis; financial stability; monetary policy.

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1. Introduction

The 2007 crisis invalidated some elements in the conventional economic thinking framework. Considering that the crisis erupted in an economic environment characterised by low inflation rates, it goes to show that subdued inflation does not necessarily ensure financial stability. After five crisis-ridden years, removing the crisis fallout on the banking system or correcting the existing imbalances has proved much costlier than the competent authorities could ever think of. Under these circumstances, the question arises as to whether central banks can be exempted from the responsibility of ensuring financial stability and whether they can efficiently run and manage an extended mandate on price stability and financial stability.

Following the onset of the global economic crisis with its roots in the financial area, governments grappled with a double challenge. On the one hand, they had to ensure financial system stability by resorting to the most within-reach tool, i.e. regulation, step which regulators, governments and central banks did, but with a time lag. They embarked on a vigorous communication campaign in an attempt at showing their commitment in this area. On the other hand, these entities had to stabilise the costs associated with systemically important banks. When the crisis broke out, governments counted on its being short-lived, so they did not hesitate to use public funds to mitigate the fallout from the crisis. Several countries employed significant public funds for stabilising the banking sector. The governments had to deal with tremendous pressure, as many considered that they had not only to raise the necessary public funds from the banking sector – seen as the culprit for triggering the global economic crisis – to stabilise it, but also to penalise this sector for its adverse effects on the economy. Prudent opinions were in favour of building a buffer out of all these additional incomes which should help rescue banks in the case where the economy faces a downturn, thereby reducing financial market vulnerability of less advanced countries (ECB, 2010).

The crisis highlighted the need for managing financial stability. The question is how this can be achieved in a globalised banking system in which the home-host relationship between parent institutions and their subsidiaries is regulated differently from one country to another or from one continent to another.

The tasks of economic policies and the institutions' structure underwent many changes both at world economy and European level. Looking at monetary policy – which has a direct impact on the banking system – by 2008 its goal envisaged price stability in nearly all countries, but since 2009 central bank communication has emphasised, alongside price stability, the financial stability and the creation of institutions playing a major role in the macroprudential regulation and supervision of the banking system, as it is common known that

only a sufficiently strong system will be able to resume its specific activities – especially lending –, destitute of which jumpstarting economic growth would be much more sluggish.

This paper focuses on the analysis of banking system stability, the effects of the fast pre-crisis leveraging and the fast post-crisis deleveraging, and their impact on the banking system.

2. Banking crisis

Caprio and Klingebiel (2003) define banking crises as much or all of bank capital being exhausted. Such crises typically comprise large-scale bank failures, depositor runs, the high level of non-performing loans, or certain emergency actions of the (Demirgüç-Kunt et al., 2006).

Reinhart and Rogoff (2011a) distinguish two types of banking crises: banking crisis type I – systemic (severe), and banking crisis type II – financial distress (milder). Reinhart and Rogoff (2011b) mark a banking crisis by two types of events: bank runs that lead to the closure, merging, or takeover by the public sector of one or more financial institutions (e.g. Venezuela in 1993 or Argentina in 2001) and if there are no runs, the closure, merging, take-over or large-scale government assistance of an important financial institution that marks the start of a string of similar outcomes for other financial institutions (e.g. Thailand, from 1996 to 1997).

Resting on the premises that the banking system is the major component of the financial system and financial stability refers to the financial system and financial stability is a public good (Schoenmaker, 2011), the producer cannot exclude anybody from consuming the good and consumption by one does not affect consumption by others. Moreover, a key issue is whether governments can still produce this public good at the national level in today's globalised financial markets.

Goodhart and Schoenmaker (2009) shows that, since financial stability is currently managed at the national level, national governments covered the costs of bank recapitalisation in the wake of the 2007 crisis. The fiscal costs of providing liquidity to banks in distress are large (in the cases where banks conduct cross-border activities). The preferred resolution of a bank failure is a private sector solution. According to Goodhart and Schoenmaker (2009), using public funding should only be considered when social benefits (as a form of preventing a deeper banking crisis) exceed recapitalisation costs at taxpayers' expense.

The banking system crisis occurred amid the build-up of vulnerabilities arising from a combination of a number of encouraging conditions (Goodfriend, 2000): low real interest rates over a relatively long period, extremely favourable lending conditions, low financial market volatility and higher asset prices.

The crisis highlighted the vulnerability of the banks whose business model highly and excessively depends on securitised financial markets which, under the crisis-induced stress conditions, led to an unrealistic assessment of risks, liquidity and position concentration, and to the inability of foreseeing a sharp reduction in collateralised loan affordability to support these assets.

Bank failures differ from non-financial corporation failures, as banks differ from non-financial corporations in terms of the manner of collecting the resources made available to their clients for lending purposes, as well as in terms of the development of securitised bonds, supervision and bankruptcy resolution regulations that are different from those applying to the traditional commercial companies. Many bank characteristics that are different from non-financial corporation characteristics require different failure resolutions. According to Flannery (1994), asset substitution poses more severe problems to banks than to non-financial corporations. Marinč and Vlahu (2012) give their opinion on bank bankruptcy resolution from the standpoint of both assets and liabilities. They point to the fact that, on the assets side, the combination of substitution assets, bank assets opaqueness, and the safety net that governments created via granting subsidies give clear incentives to bank managers to take on excessive risks. On the liabilities side, liquidity injections via liquid deposits may cause coordination problems as to the banks' day-to-day functioning. In addition, banks are interconnected, and a bank failure may spread contagion to the entire financial system, entailing significant negative externalities. Banking system characteristics are related to cash provisioning, banking coordination problems, externalities' effects on the systemic risk (contagion, the public's confidence crunch, the impact on real economy, payment systems), the relevance for ex-ante efficacy of banking operations, the problem of asymmetric information, the asset substitution problem, the opaqueness of banking operations, the prudential regulations on capital requirements (under the Basel II and Basel III Accords), deposit protection schemes, which have an ex-post impact on banking activity efficacy.

Archaya et al. (2011) highlight the presence, on a globalised financial market, of fragmented regulatory and supervisory structures, which lead to coordination problems and may cause the authorities' intervention to be delayed.

The banking crisis entered the international organisations' focus of attention for three reasons at least. Firstly, it affected the financial system as a whole, after banking sector vulnerabilities proved to be systemic in nature, weighing on the other financial system components as well. Secondly, the crisis was a global event, because contagion spread via the financial operations that are steadily and almost barrier-free conducted as a result of the free capital movements. Thirdly, the containment of contagion and the financial sector shake-up contributed to depressing economic growth prospects since they

needed public sector intervention. The intervention was made by resorting to public funds, which entailed not only a decline in household incomes, but also a change in the investment behaviour.

3. Banking crisis stages

BIS (2009) published a comprehensive analysis on financial crisis stages, which are the stages of a banking sector crisis. The banking system crisis had five stages that spanned from June 2007 to mid-2009. During this period, the crisis translated into an overall loss of confidence in the global financial system, although it unevenly hit advanced and emerging economies. BIS (2009) distinguishes five stages of the banking crisis:

3.1. Stage one (up to mid-March 2008)

The banking system crisis officially broke out on 9 August 2007, when tensions emerged on the money market. The largest commercial bank in France, BNP Paribas, announced its decision to freeze redemptions on three of its funds with investments in US subprime mortgage-backed securities. The holders of such securities therefore embarked on a quest for liquidity. In order to prevent money market distortions, both the ECB and the Fed pumped no cost money into banks in need of liquidity. The central banks acted in keeping with their mandate as lenders of last resort in order to avert a systemic crisis.

The actual volume of subprime mortgage-backed securities in banks' portfolios worldwide was unknown at the time. Banks were faced with large losses on their balance sheets following a wave of mounting valuation losses related to subprime loans granted by banks from short-term funding. The first to fall victim to the liquidity shortage was Bear Stearns, which had to publicly acknowledge its distress around mid-March 2008. Events ended up in the Treasury-negotiated takeover of the distressed investment bank by JPMorgan Chase on 16 March 2008. As a result of the loss of confidence among banks, volatility peaked at record highs and credit default swap (CDS) spreads exceeded the long-term averages, soaring almost 200 basis points in this stage of the crisis (BIS, 2009).

3.2. Stage two (mid-March to mid-September 2008)

The second stage of the banking crisis featured the worsening of financial market conditions amid investors' increased fears over bank solvency rather than bank liquidity. Their concerns were warranted, first and foremost, by the performance of the US economy. In particular, the Bear Stearns rescue had failed to usher in the US economic recovery; quite on the contrary,

the recession deepened. Secondly, the ongoing US recession had spilled over to other major economies, triggering a synchronised economic downturn. The resulting outlook for earnings, defaults and associated financial sector losses worsened, and so did bank balance sheets, entailing concerns about banks' ability to implement their recapitalisation plans.

The challenges facing the US private financial sector started to spill over to the public sector. Thus, the financial crisis set in, owing to risk mismanagement in the US real estate sector and it was only a matter of time before the two major US housing finance government-sponsored enterprises (GSE), Fannie Mae and Freddie Mac, were hit by the confidence and credit crunch. Given house price declines, heightened volatility and higher credit cost, their equity prices took a dive, generating valuation losses of 70% from the levels at the end of 2008 Q1. Hence, the US government decided to intervene and to purchase the GSE stock in July 2008. However, the measure failed to restore confidence on the housing market and, amid soaring losses incurred by the two enterprises, the US government formally took control in September 2008. The bail-out of Fannie Mae and Freddie Mac only fuelled concerns about the likely losses and the inability to replenish the capital bases of banks and insurance corporations worldwide.

3.3. Stage three (mid-September to late October 2008)

Stage three marks also the apex of the crisis, with the Lehman Brothers collapse throwing the global banking and financial system into a spiral of mistrust, liquidity shortage and bankruptcies, which eventually called for a global response of central banks, governments and international financial institutions alike.

Banks worldwide opted for hoarding cash, which led to perceptions of counterparty risk spiking and to a credit crunch. Money market rates and volatility were on the rise. The large investment banks (Goldman Sachs and Morgan Stanley) obtained permission from the US authorities to get back their universal bank status.

The contagion effects at global level soon emerged:

- In late September, the UK mortgage lender HBOS was forced into a government-brokered merger with one of its local competitors. Afterwards, the British government moved to nationalise yet another major mortgage lender, Bradford & Bingley.
- The banking and insurance company Fortis received a capital injection from the Belgian, Dutch and French governments.
- Many emerging economies faced speculative attacks, the sudden disappearance of cheap credit and troubles in public debt refinancing. Against this background, a number of emerging market countries had to resort to IMF assistance and adjustment programmes.

3.4. Stage four (late October 2008 to mid-March 2009)

Volatility abated after mid-October, as market worries were soothed by the coordinated cuts in policy rates by six major central banks. Efforts to implement additional, broad-based policy measures continued with simultaneous access to liquidity and concerted action by US and EU authorities to recapitalise a number of banks. This joint approach notwithstanding, the issue of uncertainty and lack of confidence was yet to be dealt with.

At the root of the confidence crunch sweeping through global financial markets lay the dire growth prospects. The US economy had been mired in recession ever since 2007 Q4, while the downturn in advanced European economies deepened, with emerging economies being unable to substitute these countries' consumer demand. The negative economic developments of 2008 caused equity markets to resume the downward path in early 2009. Despite fears of a renewed cycle of mistrust and bankruptcies, the equity market decline actually marked an adjustment to the new reality of lower asset prices and weak economic performance worldwide. German and US governments had to step in again in January 2009 in order to bail out several smaller banks, but these actions had no bearing on global developments whatsoever.

In the absence of any signs of economic recovery, volatility heightened again in March 2009 and money market rates re-embarked on an upward path, although remaining below the highs seen in October 2008. There were two major sources of uncertainty that generated the renewed spike in volatility during the period under review. First, equity prices for the investment banks outperformed those for the broader banking sector, reflecting the recapitalisation efforts in the earlier period, which reignited worries about the banking sector soundness and the likelihood of further bail-out measures. Second, concerns were also fuelled by the large amounts destined to clean up the banking and financial sector, as well as by the potential losses from the delayed economic recovery, which were starting to take a toll on government finances in advanced economies.

3.5. Stage five (from mid-March 2009)

The banking crisis came to an end when vulnerabilities and uncertainty alike shifted from the financial sector to the public sector and economic activity. There were at least two factors that helped exit the financial crisis after March 2009. The first was the confidence boost from announcements by central banks on expanding both the range and the amount of assets they would be prepared to purchase. Such actions were conducive to cleaner balance sheets and regaining confidence on the money market. Secondly, the initiatives launched at the G20 summit in London in April 2009 envisaged large increases

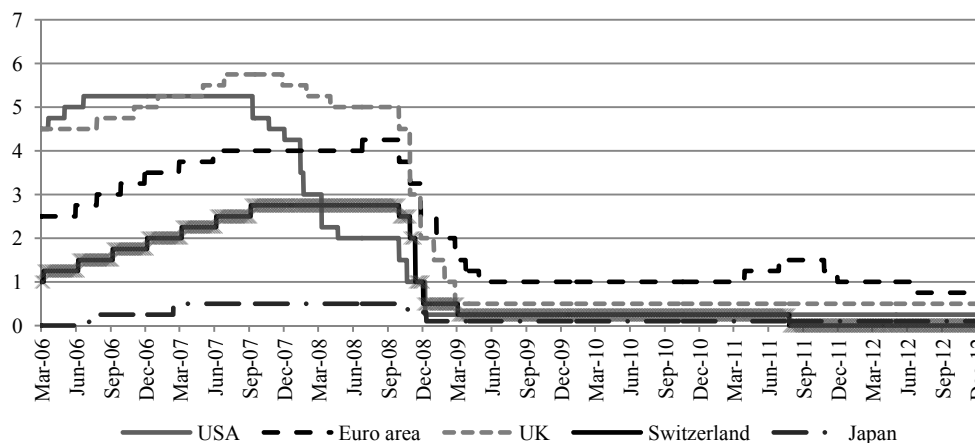
in resources for both the IMF and other international financial institutions with the primary goal of restoring confidence and alleviating uncertainty globally. Markets responded to the good news.

Despite the good news, volatility and money market indicators did not return to the levels seen in the pre-crisis period of 2007, owing to market dysfunctions. Even though unprecedented policy action by national authorities and international bodies alike had succeeded in halting the financial collapse, it was merely the start of structural reforms ensuring resource allocation and bringing prices into line with their long-term trend.

4. The analysis of the policy responses to the crisis with a bearing on the banking sector

The financial crisis and the protracted downturn of the world economy prompted policymakers, i.e. central banks and governments alike, to alter their objectives and instruments by stepping in to halt the financial sector decline in the first place and then to support economic restructuring. Most of these interventions in the economy consisted of extraordinary policy actions, via non-standard instruments, whose swift progress calls for proper explanation and classification in order to better understand them.

Central banks took centre stage, via monetary policy, in addressing the financial crisis from its very onset, yet the efficacy of their policies ran out once the crisis entered stage five. The most acute phase for central banking and monetary policy innovation was the year 2008. At the outbreak of the financial crisis, central banks operated in a relatively stable macroeconomic environment, with economic growth and subdued inflation, yet with external imbalances. The advent of the crisis and the US economy falling into recession at end-2007 triggered a shift in central banks' macroeconomic policy framework. Mid-2008 saw the first challenge posed by slowing growth coupled with inflation rising above targeted or forecasted levels. The Lehman Brothers collapse and the worsening economic outlook prompted central banks to cut policy rates, after having refrained from a similar move in the first part of the year due to persistently high consumer prices. By the end of stage five of the financial crisis, monetary policy interest rates had been brought close to zero in the US, Japan, UK, Canada, Sweden and Switzerland. The monetary policy interest rate in the Euro area was raised by 25 basis points in July 2008 in response to higher consumer prices. Afterwards, from October 2008 until May 2009, the European Central Bank (ECB) gradually lowered the key interest rate to 1%, which remained unchanged until 2011, as illustrated in Figure 1.



Note: The monetary policy rates are the followings: FDTR Index (Federal Funds Target Rate) in the USA, EURR002W Index in the Euro area, UKBRBASE Index in the UK, SZLTTR Index in Switzerland, BOJDTR Index in Japan.

Source: Bloomberg.

Figure 1. The evolution of monetary policy interest rates from March 2006 through December 2012

In the case of emerging economies, which faced the risk of speculative attacks on the exchange rate, monetary policy cuts could not be immediately applied to fight the crisis, as central banks had to wait for the foreign exchange markets to calm down.

The first impulse towards monetary policy innovation was triggered by the monetary policy interest rate reaching its efficacy limit when it came close to the 0% level. In principle, central banks attempted to use their liquidity management operations⁽¹⁾, generally known as the central bank balance sheet, in order to enhance the monetary policy efficacy. BIS (2009) classified these balance sheet operations of the central bank into three broad categories according to how the operations are related to their objectives. Thus, the first category consists of operations aimed to keep money market short-term rate (generally, overnight) anchored to the policy rate. This category of operations is less related to the central banks' balance sheet, yet innovations have also been made on this segment in order to promote the use of central bank reserves. The central banks which made the heaviest use of such operations were the Federal Reserve and the Bank of England, closely followed by the Euro area central banks and the Bank of Japan. The Swiss National Bank was the least reliant on this type of operations. The second category of operations involves initiatives to facilitate the smooth functioning of the interbank market. Most issuing banks resorted extensively to central banks' balance sheet operations. However, mention should be made that it was the Swiss National Bank again which scarcely used this type of operations. The third category consists of operations aimed at influencing lending conditions and the financial market, in general.

In this category which falls under the umbrella of balance sheet policy, the Federal Reserve introduced the largest number of innovations (regarding the source of operation financing, the type of operation as well as the eligible collateral). Nevertheless, the Bank of Japan, which also made a series of innovations, used the largest number of instruments in this category.

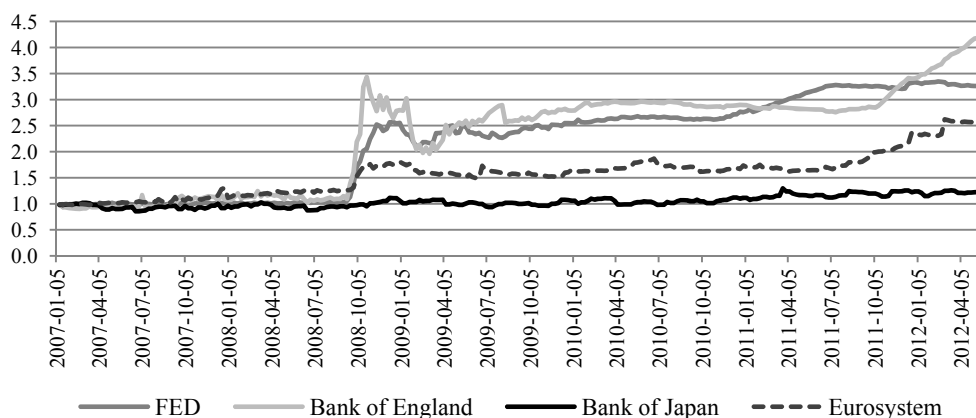
The Bank of England was the most active central bank in terms of the instruments used, closely followed by the Federal Reserve, with the Fed accounting for most of the innovations. The Swiss National Bank was the central bank that used the smallest number of instruments, avoiding balance sheet operations. Consequently, the Swiss National Bank hardly used innovations in its liquidity management operations.

The second impulse for innovation in the central bank activity was determined by the vulnerability contagion from the financial sector and the need for concerted moves by major central banks whose currencies are international reserve assets. This innovation category comprised two types of measures jointly adopted by central banks:

- Liquidity operations consisting of swap lines;
- Measures to facilitate lending through the concurrent monetary policy rate cut.

Five central banks whose currencies were international reserve assets used liquidity operations during the crisis peak (stage three) in September and October 2008. The policy rate was concurrently cut also in October 2008 (stage three of the crisis), thus providing the banking system with the necessary liquidity.

In parallel, starting with September 2008, central banks' assets rose significantly on the back of the aforementioned measures. Figure 2 presents the growth rate of central banks' assets.



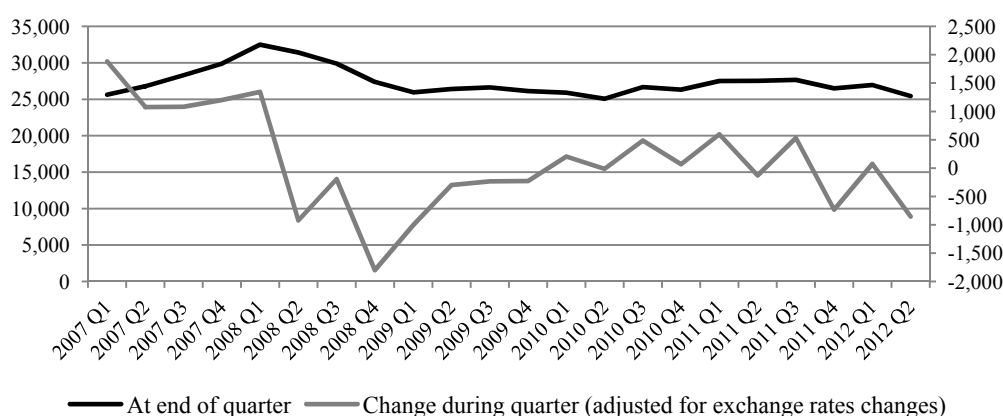
Note: In order to remove the effect of exchange rate movements, the percentage changes of bank deposits are calculated based on data expressed in domestic currency.

Source: Datastream.

Figure 2. The growth rate of central banks' assets (05.01.2007=100%)

Asset multiplication has an impact on the banking system and will further influence the banking system recovery. The growth rate of central banks' assets in this period is supportive of the loose monetary policy, the so-called non-standard policy providing banks with easy money.

Short-term indebtedness is indicative of the international aspects of the banking crisis. The BIS statistics on banking and international securities (shares and bonds) markets can be used to estimate the size of the drop in short-term international indebtedness. According to the methodology presented by Moessner and Allen (2011), the short-term international indebtedness is the sum of total international bank deposits and international debt securities outstanding with maturity up to one year. The following figure shows the quarterly evolution of short-term international indebtedness and its quarterly changes during 2007 Q1-2012 Q2.



Source: own calculations based on BIS data.

Figure 3. *The evolution of the international short-term indebtedness, 2007-2012 Q2 (in USD billions)*

As shown in the previous chart, the most severe decline in the international short-term indebtedness was seen in 2008-2009. According to Moessner and Allen (2011) the percentage contraction was much less severe in 2008-2009 than in 1931.

The international banking, measured by the international short-term indebtedness, is only part of the totality of banking. Total bank deposits therefore provide another indicator of the scale of the crises. In this period, deposits with banks in most important states posted mixed developments on a country basis, as revealed by the table below. In order to remove the effect of exchange rate movements, the percentage changes of bank deposits are calculated based on data expressed in domestic currency.

Table 1

Changes in bank deposits during and around the 2008-2009 financial crisis

Country	Total deposits at end 2007 (billion USD)	Percentage change in bank deposits Sept 2007-Aug 2008	Percentage change in bank deposits Sept 2008-Aug 2009
USA	6,714	+7.8 (a)	+9.3 (b)
Euro area	13,209	+0.5	-0.6
UK	11,063	+3.2	-6.5
Switzerland	1,155	-9.7	-1.1
Japan	4,956	+2.0	+1.6

Notes: (a) 29 August 2007 to 27 August 2008; (b) 27 August 2008 to 26 August 2009.

Source: Moessner, Allen (2011).

As shown in the table above, bank deposits fell during September 2007-August 2008 in Switzerland and during September 2008-August 2009 in the Euro area, the United Kingdom and Switzerland. In the United States, deposits increased after the Lehman Brothers failure at a faster pace than a year earlier.

During the fourth stage of the banking system crisis, it became increasingly clearer that monetary policy measures alone are not enough to stop the decline in economic activity and support the economic rebound. Moreover, the governments had already intervened to rescue the banking and financial system, in general, but even so there was a lack of confidence in the economic growth returning to positive territory. In this context, at the end of the fifth stage of the financial crisis, nearly all OECD member states had announced the adoption of fiscal packages to foster the resumption of economic growth. The United States were the first economy (except Japan) which took such fiscal measures by also preparing the largest fiscal package (2% of GDP for 2009 and 2010).

By resorting to such fiscal measures to support economic growth, the national authorities made a fiscal policy innovation, as they implicitly accepted a budget deficit by far wider than it might have been possible to finance under normal functioning conditions of the economy and the financial markets. Moreover, this decision has also a medium-term impact, due to the implicit rise in public debt.

The interventions aimed at saving and then restoring confidence in the financial sector were made in the first three stages of the crisis. In the first two stages, central banks had a major contribution to saving the confidence and preventing the discontinuation in the activity of the financial and, particularly, the banking sector. In the third stage of the crisis, governments had to intervene by injecting funds in the form of capitalisation in order to restore the confidence in the banking and financial system's capacity to contribute by and large to resource allocation in the economy.

In September and October 2008, governments implemented a new global strategy for the banking and financial sector and shifted from the case-by-case

rescue of systemically important entities (the evidence used in the US is highly relevant in this case) to rescue packages aiming the whole financial sector in a country. Such sets of measures focused on fighting the major risks to the financial system:

- Governments restricted the short selling of the shares held by banks and financial undertakings in order to stop liquidity crunches turning into solvency issues;
- Governments opted for bank capital injections in order to prevent solvency issues;
- To solve issues related to doubtful assets in the balance sheets of banks, governments proceeded to purchase such assets and/or provide guarantees and insurance for large losses arising from the portfolios of some institutions;
- To avoid contagion, government resorted to deposit insurance and the nationalisation of some banks incurring losses.

BIS (2009) classified the measures to restore the confidence in the banking sector adopted by governments into seven categories (deposit insurance, restriction on short selling, capital injections, debt guarantees, asset insurance, asset purchases, nationalisation). The governments of the nine countries whose banks held the largest share of the world banking system when the crisis broke out (Australia, Switzerland, Germany, France, the United Kingdom, Italy, Japan, the Netherlands, and the USA) used three of these measures, namely the restriction on short selling, capital injections and debt guarantees. The other measures frequently resorted to were deposit insurance and asset purchases. It is worth noting that Japan chose not to resort to deposit insurance, while Switzerland used only three of the seven measures (Table 2).

Table 2

Measures to restore confidence in the financial system

	Australia	Switzerland	Germany	France	UK	Italy	Japan	The Netherlands	USA
Deposit insurance	√	√	√	√	√	√		√	√
Restriction on short selling	√		√	√	√	√	√	√	√
Capital injections		√	√	√	√	√	√	√	√
Debt guarantees	√		√	√	√	√	√	√	√
Asset insurance					√			√	√
Asset purchases	√	√	√		√		√		√
Nationalisation			√		√			√	√

Note: Data available by end-April 2009.

Source: BIS (2009), p. 103.

The financial crisis revealed that the prolonged period featuring risk-free macroeconomic conditions contributed to the creation of a business model in the financial sector much less competitive than similar models in other

economic sectors. The analysis conducted by the BIS (2010) is based on three elements relevant to the competitiveness among sectors:

- The performance in terms of profitability;
- The relevance to economic stability, in terms of the share in total GDP;
- The global resource allocation in terms of the activity expanding internationally.

The key function of the financial system is the allocation of financing resources, and the limits of its scope are defined by the capability to manage risk and indebtedness. The BIS (2010) analysis based on the global financial data provided by all economic sectors for the 1995-2009 period shows that the financial sector recorded a performance defined as profitability, comparable with that reported by the other economic sectors. Table 3 illustrates the evolution of ROE (return on equity) in various economic sectors worldwide.

Table 3

ROE in various economic sectors worldwide

	1995-2009	1995-2000	2001-2007	2008-2009
Banks	12.2	13.3	12.8	3.2
Non-bank financial institutions	11.2	12.3	11.4	5.4
Non-financial sector	11.7	10.9	12.8	9.8
Energy	14.2	10.8	18.6	10.1
Industry	10.4	8.3	11.5	11.0
IT	12.8	15.1	12.8	10.3
Utilities	10.8	9.3	11.6	11.9

Source: BIS (2010), p. 75.

However, there are two issues. On the one hand, the performance of the financial sector was as good as that reported by the other economic sectors only during the boom period and in an environment featuring low interest rates and subdued inflation and, on the other hand, the financial sector managed to obtain these results solely by contracting a 5-6 times larger debt compared with the other economic sectors and for the entire period under review. Under the circumstances, it is clear that the current business model in the financial sector uses too many resources that could be more efficiently resorted to by other sectors. Moreover, the use of resources by the other sectors appears to induce also a lower level of risk compared with that in the financial and banking system.

A large share of the heightened risk associated with the financial and banking sector, and thus of the vulnerability it induces across the entire economy, comes from the concentration of this sector, at least after the 1990s, on funding from short-term financial resources (excessive use of money market instruments.) This development was partly encouraged by the changes in the activity of the central banks that had opted for liquidity management as the key monetary policy instrument. But instead of central banks accommodating

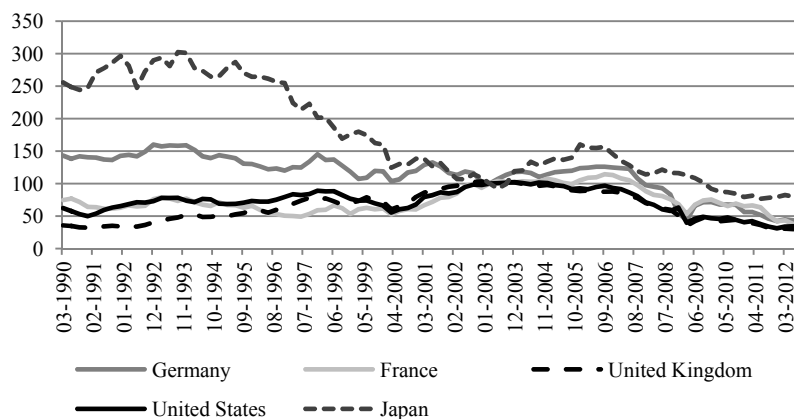
money market needs that actually represented the demand from the real economy conveyed via the commercial banks, central banks found themselves captive to the liquidity needs of the money market, given that banks have been seeking additional profits by way of arbitrage at global level on the money market in other economies.

World economy saw a fast-paced growth after 1989. This growth was partly the result of certain structural changes underwent by the financial sector. Thus, the free movement of capital and the continuous functioning of stock exchanges worldwide had an overwhelming importance. These changes would not have been possible in the absence of technological advances in the IT&C.

According to BIS (2010), the share of value added in the financial sector compared with total value added in the USA or the EU founding Member States saw a twofold increase between 1980 and 2009. Therefore, in the USA, the share of value added in the financial sector went up from 5% in 1980 to 8% in 2009. Concurrently, in Australia, the share rose from 3% to 9%. The increased relevance of the financial sector in the total of national economies also implied the reallocation of certain financial resources from other economic sectors towards the financial sector following a development trend. Under these conditions, the share of the capitalisation of the financial sector in terms of total capitalisation rose even higher. This increase was more noticeable in the economies featuring a higher financial innovation rate. Hence, the share of the capitalisation of the financial sector in Germany grew from 20% in the 1970s to over 30% in the 1990s, while in the USA the share of the capitalisation during the same period moved up from 5% to 20%. An explanation is required regarding the larger share of capitalisation in Germany compared with the USA. The main reason relates to the differences regarding the attraction of resources for financing economic activity. While in the USA the model of capital market financing prevailed, in continental Europe, especially in Germany, the prevalent model consists in the cooperation with the commercial banks employing resources from household savings.

5. The post-crisis evolution of the banking sector

In 2012, the developments in the bank share prices on the world markets (Figure 4) show that the markets still fear that the banking sector and the financial sector in general may have not yet eradicated the problems they have been facing and that the persistent uncertainty is still reflected by the rise in volatility and CDS.



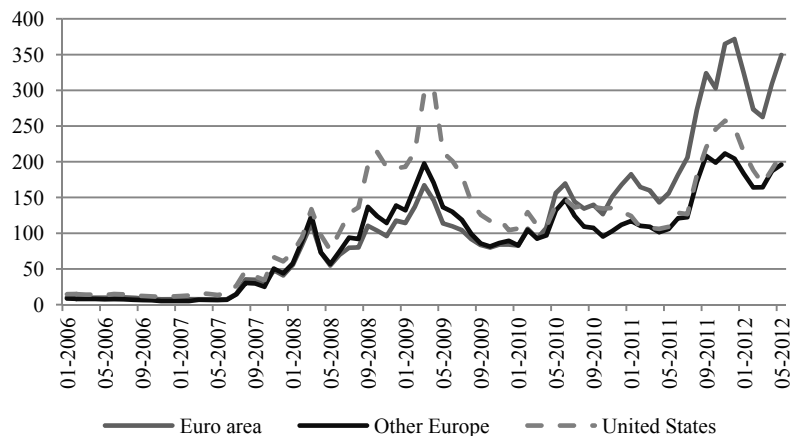
Note: Ratio to broad equity index; quarterly averages, 2003 average = 100.
Source: BIS (2012), p. 65.

Figure 4. Banks: relative equity prices (in bp)

In terms of the international organisations involved in redesigning the regulatory framework for the activity conducted by banks and the financial sector (G20, IMF, BIS, Financial Stability Board) there are two pending issues that the regulatory and supervisory agencies need to tackle both at a national and international level. The first issue consists in restoring the soundness of the banking system, which should be viewed as a short-/medium-term objective. It needs to be fulfilled by way of recapitalisation which must also cover the potential debts and losses unrecognised previously. Second, in the long run, the regulatory framework must be altered so that the new business model of the banks should meet three conditions:

- To generate a sustainable profit flow;
- To reduce banks' reliance on the authorities' support;
- To mitigate the contagion risk worldwide.

Based on the BIS (2012) analysis, from the standpoint of investors and stock exchanges, the banking sector crisis was still ongoing in 2012. This conclusion stems from the fact that the price of bank shares did not go up from end-2008. Moreover, the level of CDS for this sector started to rise again in 2012, especially in the Euro area, as illustrated in Figure 5.



Source: BIS (2012), p. 65.

Figure 5. CDS spread developments

The banking system crisis would not have had the known consequences if commercial banks had enjoyed better capitalisation and had had liquidity reserves. It is obvious that the insufficient liquidity was partly responsible for the solvency issues faced by certain banks. Yet it is equally true that the liquidity risk is inherent to banking activity⁽²⁾. In terms of adjusting banks' liquidity position in the aftermath of the financial crisis, the situation did not improve significantly. According to BIS (2012), the Euro area banks find themselves in the most delicate situation across the developed economies, as they keep financing their activity from resources that are unsafe in times of crisis, as it already happened in the previous period. Thus, the ratio of loans (with very low liquidity level) to deposits (that are stable) stood in 2012 in the vicinity of 130%, a level attained at the onset of the crisis which has remained broadly unchanged ever since. On the other hand, the experience in the USA, the emerging economies and Japan is different as the commercial banks in these countries have diversified their liquidity sources, so that 2009 through 2012 the loan-to-deposit ratio dropped from 90% to 70% in the USA.

The relatively fragile position of Euro area banks regarding liquidity is even more illustrative if the access to a stable funding ratio (defined as a percentage of long-term funding in total funds) is taken into consideration. From this standpoint, the European banks witnessed a decline in this ratio during 2009-2012 from 60% to 55%. During the same period, this ratio stood at around 75% in the USA, after having reported 2008 through 2010 a marked rise from 60% to 75%. Commercial banks will have to significantly improve their

liquidity access by reducing the maturity mismatch via increasing the volume of liquid assets and long-term financing.

The efforts aimed at bank recapitalisation were by far more productive than those focusing on improving their liquidity conditions. Therefore, common equity to total assets ratio rose by 20% in the major European banks during 2008-2011, while in the USA and in Japan it increased by 33% and 15%, respectively. The method to improve this ratio was different. Thus, according to BIS (2012), the banks in Japan changed both terms of the relation as even though their capital went up 60%, their balance sheets expanded. In the USA, the rise in equity was accompanied by a smaller increase in assets, which led to a 33% ratio, while in the case of European banks the rather modest capitalisation was made amid the drop in assets, which resulted in a fairly substantial improvement of the ratio.

The recapitalisation of all the major banks over the same period is a significant challenge for the world economy, as it may have adverse effects on the other sectors due to the reallocation of capital and the decline in profit. In order to avoid the blockages to capital investments, the BCBS recommended the use of recapitalisation instruments that do not affect depositors and tax payers in the event of the bank failure (because they allow the absorption of the loss) or that can be converted into shares in the case of a troubled bank.

Conclusions

Bank recapitalisation is a medium- and long-term measure, but international supervisory authorities demand that actions be initiated in order to immediately contribute to restoring confidence in the banking system. Looking at interbank confidence on the money market, banks appear to have lost trust especially in their Euro area peers.

Restoring both confidence in the banking sector and interbank confidence on the money market is contingent on at least four factors (BIS, 2012):

- Banks need to mitigate their on-balance-sheet credit risk. Given that governments in advanced countries are currently over-indebted, sovereign bond holdings of banks are a source of higher credit risk. Thus, by reducing their holdings of such assets, banks may contribute to people's regaining their trust in the soundness of the banking sector.
- Banks' internal credit ratings models are opaque and do not contribute to lessening interbank market suspicions over the quality of bank assets. However, in the event of any vulnerability across the banking sector, by perpetuating the opaqueness of these models, there is a danger that a new liquidity crisis may arise, entailing solvency problems.

- Banks need to recognise all losses in their balance sheets so as to ensure the efficacy of public authorities' support. As illustrated by the successful resolution of the Nordic crisis in the 1990s, such efficiency implies the use of the available fiscal space to absorb financial sector losses and support balance sheet repair.
- Last but not least, bank customers also associate bank credibility with stakeholders assuming responsibility for the activity conducted by these institutions. Specifically, lower uncertainties surrounding the banking sector correlate with bank stakeholders bearing the burden of losses in this sector.

In the aftermath of the banking system crisis, the global financial environment underwent changes, considering the introduction of new regulations only. According to BIS (2012), over the long run commercial banks will face at least three challenges: the withdrawal of official support, the need to cut operating costs and the rescaling of international banking.

The withdrawal of the official support to the banking sector will primarily prompt commercial banks to find new methods to augment their capital. During the financial crisis, capital requirements were changed twice, so that banks will have to raise additional capital, in line with the new capital requirements under Basel III.

The withdrawal of the official support and the need to make capital increases will force banks to cut their operating costs. Normally, the financial crisis should have immediately compelled them to lower such costs, but that was not the case, as illustrated by the information released by the BIS (2012).

Facing recapitalisation needs and taking into account the difficulties related to the lack of confidence on money markets, large banks have scaled back both domestic and foreign activities. As a result, during 2008-2011, the share of credit granted by these banks to foreign borrowers narrowed by 10 percentage points (BIS, 2012), eliciting two responses from markets and national regulatory authorities. Thus, banks in the major Euro area countries, as well as in Switzerland and the United Kingdom, scaled down their foreign activities to a larger extent, whereas banks in the United States, Japan and Spain (up to 2012) strengthened their foreign positions, in an attempt to take advantage of other banks' withdrawal. Secondly, supervisory and regulatory authorities in the countries having faced reductions or evaporations of cross-border credit demanded that local subsidiaries be established in order to raise new funds. However, such action means a renewed involvement of central banks aimed at meeting new liquidity needs, postponing the moment when commercial banks should manage without official support.

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- (1) Including the operational framework for open market operations, referring to the maturity of operations, the price and the collateral requirements.
- (2) By definition, banks take household savings in the form of short-/medium-term deposits that are next used to grant medium-/long-term loans, which is referred to as maturity transformation.

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