## FINANCIAL CRISIS IN BANKS

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*Abstract. The present paper tries to cast some light on the origin of the financial and banking crisis. Firstly, it emphasizes the changes made by the central banks in order to achieve better regulation and supervision of the banking system. Secondly, it attempts to answer the question whether this financial crisis could have been foreseen. Last, but not least, it offers an overview on the characteristics of a substandard credit.*

*Keywords: financial crisis, banking panic, substandard loans.*

***JEL classification:*** *G21*

### 1. Introduction

History shows that the financial crisis started in 2007 is not the only crisis humanity has faced and most likely will not be the last one. From time to time, the economies in the developed countries go through a period of variable recession. According to the National Bureau of Economic Research (NBER), recession is briefly defined as two consecutive quarters in which the GDP is decreasing, but other factors are also taken into account, such as unemployment.
In the U.S. history, the period between 1991 and 2001, characterized by continuous expansion, is unique because there was no clearly defined recession, although the GDP growth rate had decreased. According to the NBER, the recession which started on December 2007 came after six years of expansion and it ended in June 2009, lasting 18 months and being the second longest recession period since the Great Depression (which lasted 43 months).
The chart below shows the quarterly evolution of the US GDP for the period 1991 – 2012. As can be seen, the trend was positive, the GDP has increased from one year to another.

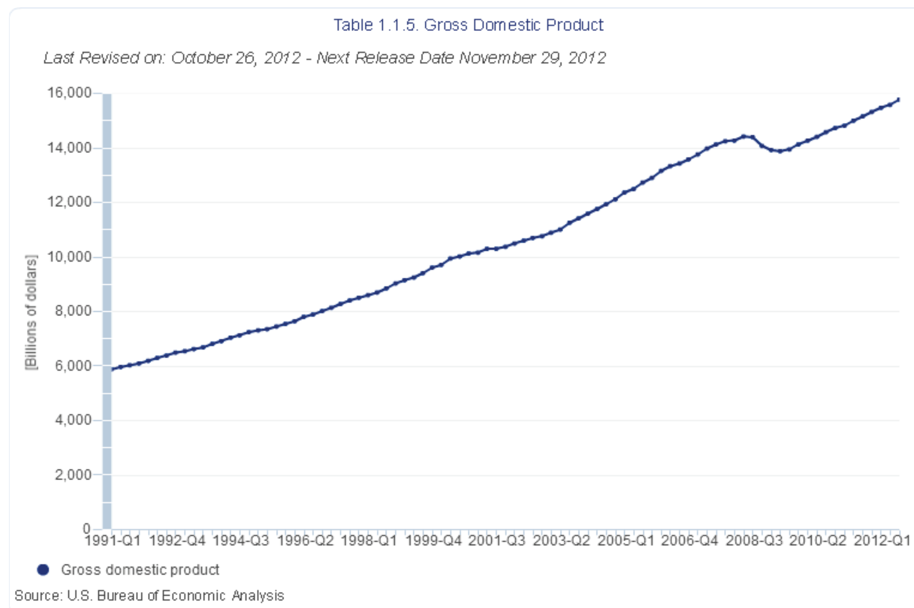


Figure 1: GDP quarterly evolution for the period 1991-2012
Source: based on data published by the US Bureau of Economic Analysis

An important study on the topic of financial crises conducted by Reinhart and Rogoff (2011) identifies a number of 296 crises in 66 countries, during a time span of 800 years. In their book, the two authors focus on the payment incapacity of both developed and developing states, determinant which didn't have a major influence for the 2007 crisis. The financial crisis may have ended, but it has generated a new turbulent period, namely the sovereign debt crisis. Greece is the most affected country in the context of this new crisis. In order to overcome financial difficulties, it received a bailout from the European Union and IMF, with the condition of applying harsh austerity measures.
Reinhard and Rogoff also study 138 banking crises which occurred after the Second World War. The aim of this analysis is to identify the effects of a banking crisis on a country's economic growth rate, and on the growth rates of the budget deficit and national debt. According to the authors, there are two common characteristics of the banking crisis unfolded in developed and developing countries. The first characteristic refers to the increase of the capital inflows during the period preceding the crisis. The second characteristic refers to the price increase of residential property and/or business.

## 2. The roots of the banking financial crisis

The financial crisis started in the U.S. in the first half of year 2007, when several mortgage banks went bankrupt. The first bank to fall victim to the credit crunch in substandard conditions was the bank Mortgage Lenders Network on February, 5, 2007. On June, 7, 2007, U.S. investment bank Bear Stearns prohibited withdrawals from two of its own funds that invested in American CDOs, due to the fact their value had dramatically declined.

The biggest and the most important French bank, BNP Paribas, also faced problems. On August, 9, 2007, it also prohibited withdrawals from own funds, because the CDO market (based on mortgages) was no longer offering reliable prices. On August, 10, 2007, due to a shortage of liquidity on the interbank market, central banks all over the world started injecting money in the banking system: the Federal Reserve allocated 43 billion dollars, the European Central Bank 215 billion dollars, and the Bank of Japan 8 billion dollars.

Problems began to occur in other banks. For example, on August, 16, 2007, Countryside Financial, the largest US mortgage bank, avoided bankruptcy by receiving a loan of 11 billion dollars from a banking consortium. On August, 28, 2007, local German bank Sachsen Landesbank managed to avoid bankruptcy caused by American CDOs being taken over by Landesbank Baden-Württemberg.

On September, 13, 2007, the BBC reports that the Bank of England secretly provided 21 billion pounds sterling to the mortgage bank Northern Rock. The news generated massive withdrawals the very next day, this being the first British banking panic since 1830. During the whole year 2007, the US Federal Reserve continued decreasing the benchmark interest rate from 5.25% to values approaching zero. The purpose of such strategy, applied by other central banks like the European Central Bank or the Bank of England, was to decrease credit rates, especially those granted for the real estate market.

Difficulties continued in 2008, when the investment bank Bear Stearns was saved from bankruptcy by merging with other commercial bank, due to the intervention of the Federal Reserve. IndyMac, one of the largest savings banks in the US was placed under the management of Federal Deposit Insurance Corporation (FDIC) and was nationalized in the end. Fannie Mae and Freddie Mac, the two government-sponsored mortgage companies, which were backing more than half of the residential mortgage market, were placed under the administration of the Federal Housing Finance Agency (FHFA).

It is generally known that, in a sound economy, banks sustain and lend each other through the interbank market. These loans are on very short term (one day or night) to cover liquidity shortages. The liquidity excess of one bank is offered as a short term loan to a particular bank which lacks financial resources. The value of the interbank rate is close to the Federal Reserve (FED) reference rate, with the condition of mutual trust between banks. For example, if the reference rate is 5.25%, the interbank rate is between 5.30-5.35%, varying by 5-10 percentage base points from the reference rate. As previously mentioned, the Federal Reserve lowered the benchmark interest rate, and during July-August 2008 the interbank rate was set to approximately 2.65%. On September, 18, 2008, the rate increased from 3.75% to 6% in a single one day, signaling mutual distrust between banks and refusal of loans, fact that generated a liquidity crisis.

In his 2009 work called "*Slapped in the Face by the Invisible Hand: Banking and the Panic of 2007*", Gary Gordon stated that "the shadow banking system" which generated the credit crisis is, in fact, vulnerable to banking panic. The events unfolded in August 2007 led to a banking panic. According to Gordon's definition, a banking panic is a systemic event during which the banking system cannot meet its financial obligations, thus becoming insolvent. If in the 19$^{th}$ and 20$^{th}$ centuries, the phenomenon translated into people running to the banks in order to withdraw their money due to the lack of trust (episode also linked to the bankruptcy of the British

Northern Rock bank), the current panic translated into mutual distrust between banks and their refusal to grant each other loans (episode started on September, 18, 2008). The question arising now is which event determined the increase of the interbank rate on September, 18? The explanation would be the following: one of the most important American investment banks, Lehman Brothers, dating back to 1850s, suspended payments and filed for protection from creditors under Chapter 11 of the US Bankruptcy Code. The bank had assets worth 691 billion dollars and its bankruptcy was the biggest in the world, exceeding by far the one of Washington Mutual, of 328 billion dollars. Lehman brothers share price decreased by 90% in the same day. The Federal Reserve refused to bail it out, in spite of the fact that it saved Merrill Lynch during September, 13-14.
The reasons behind FEDs refusal of saving Lehman Brothers could be twofold: investment banks were “too big to fail”; Lehman Brothers had to be turned into a scapegoat, as a warning sign for other banks. Various voices in the media warned that, if the central bank always intervened and saved banks in distress, these credit institutions would take even more risks in the future. Another possible explanation for why the FED stepped back could be found in the statements of the Lehman Brothers CEO, Richard S. Fuld Jr., who assured and reassured the public that his institution was having no problems that the bank could not face on its own. Lehman Brothers was an investment bank, not a commercial or savings bank that granted direct loans on the housing market or collecting deposits from the general public. However, the bank had been extremely exposed to loans granted in substandard conditions, because it was one of the main players in the securitization process that turned mortgages into securities. The bankruptcy of this investment giant affected not only other banks who acted as counterparties of Lehman Brothers in these complex operations, but also various hedge funds which had previously invested in the CDSs sold by the bank. Exposures generated by investing into securities linked to mortgages were backed by credit insurance. The bankruptcy of Lehman Brothers also affected AIG, the biggest insurance company from the US market, at that time. AIG had a leading position as a CDS issuer for numerous clients, including Lehman Brothers. Moreover, AIG had made important investments into the CDOs issued by Lehman Brothers and other investment banks. When Lehman Brothers filed for Chapter 11, AIG’s rating was downgraded. As a consequence, AIG had to put 18 billion dollars as collateral in order to insure its CDSs contracts, but the company could not provide such financial resources. On September, 17, 2008, AIG followed the footsteps of Lehman Brothers, calling for the already famous Chapter 11. All these events led to a decrease of the trust between financial institutions and an increase in the interbank interest rate, in the end.
The financial crisis did not limit within the borders of the US, it spread to the global level because of the financial derivatives acquired by financial groups from the American institutions. For example, on November, 14, 2007, HSBC bank reported an accounting devaluation of 3.4 billion dollars, caused by an American subsidiary of the bank. On December, 6, 2007, RBS – the largest bank in the world in terms of assets – assessed a decrease in its net worth of 2.5 billion dollars. The German institution Deutsche Bank incurred a loss of 3.2 billion dollars, and the French bank Société Generale issued on February, 19, 2008 new shares worth 5.5 billion Euros in order to cover losses of 4.9 billion Euros, caused by a single trader named Jerome Kerviel. The French bank also lost 3.2 billion dollars due to the mortgage-backed

securities from the American market. This was only the beginning, which was followed by other reevaluations and losses incurred by different banks. As the problems increased in the banking sector, two solutions emerged: banks were either receiving bailouts from the state, or were nationalized.

**3. New regulations in the banking system amid the ongoing crisis**

The financial crisis has revealed the need for better regulation and supervision of banks. An important change was related to the improvement of the quantity and quality of bank capital. Under Basel III, banks will face strong majority equity indices, such as general tangible capital (also called capital base). This tangible capital is basically formed of the common shares and reserves which will be increased from 2% to 4.5%, plus a "conservation reserve" of 2.5%, so the effective capital rate will be of 7%. Banks failing to reach this level of capital will have restrictions on the payment of dividends and bonuses.

Following the American model, an indicator of the indebtedness degree is also taken into discussion, but the European banks still oppose to it. This indicator, determined as a rate between assets and capital, will be established at a maximum level of 33. The resentment coming from the European banks is based on the fact that, in case of some banks like UBS or Deutsche Bank, the indicator exceeds 70 since the crisis has started.

The three pillars of Basel II and III are well known:

- Pillar I: Minimum capital requirements;
- Pillar II: Supervising banking activity;
- Pillar III: Market discipline.

According to Pillar II, another change could refer to introducing additional capital taxes (1-2%) for those banks which might cause a systemic risk and for those banks which might incur short-term high risks, due to their remuneration system. Switzerland is one of the countries which has anticipated these international standards, increasing minimum capital requirements for its two main banks at 10%.

Given the fact that the current crisis was generated by a liquidity shortage, there are several voices calling for implementing a better system of liquidity reporting and stricter liquidity requirements. Another condition would be an increase in the transparency related to trading CDSs and securitization. By using securitization, the banks were trying to decrease the credit risk and transfer it to other parties, while maintaining in their portfolios only low risk credits. Notwithstanding this, bank were much too exposed to purchasing mortgage-backed securities. According to the new regulations, banks will have to keep minimum 5% of their loans. There is also the discussion of a “mortal danger” for the banking system, namely generated by the banks which are “too big to fail”. The Lehman Brothers episode proved that any bank can go bankrupt. Hence, there is the tendency to prevent that banks become too big.

**4. Could be anticipated financial crisis?**

In his 2009 book called “23 Things 23 Things They Don’t Tell You about Capitalism”, Ha-Joon Chang presents an interesting episode from Great Britain, related to the financial crisis:

*„In November 2008, Queen Elisabeth II visited the London School of Economics, which has one of the most highly regarded economics department in the world. When*

*given a presentation by one of the professors there, Professor Luis Garicano, of the financial crisis that had just engulfed the world, the Queen asked: 'How come nobody could foresee it?' Her Majesty asked a question that had been in most people's mind since the outbreak of the crisis in the autumn of 2008. During the last couple of decades, we were repeatedly told by those highly qualified experts (...) that all was well with the world economy. We were told that economists had finally found the magic formula that allowed our economies to grow rapidly with low inflation (...). So it was a real puzzle to most people, including the Queen, that things could go so spectacularly wrong in a world where clever economists were supposed to have sorted out all the major problems. How could all those clever guys with degrees from some of the best universities, with hyper-mathematical equations coming out of their ears, have been so wrong? Learning of the sovereign's concern, the British Academy convened a meeting of some of the top economists from the academia, the financial sector and the government on 17 June 2009. The results of this meeting was conveyed to the Queen in a letter, dated 22 July 2009, written by Professor Tim Besley, a prominent economics professor at the LSE, and Professor Peter Hennessy, a renowned historian of the British Government at Queen Mary, University of London.*
*In the letter, Professor Besley and Hennessy said that individual economists were competent and 'doing their job properly on its own merit, but that they lost sight of the wood for the trees' in the run-up to the crisis. There was, according to them, 'a failure of the collective imagination of many bright people, both in this country and internationally, to understand the risks to the system as a whole'. A failure of the collective imagination?Hadn't most economists, (…)told the rest of us that free markets work best because we are rational and individualistic and thus we know what we want for ourselves (…) and how to get it most efficiently?(…) The great and the good of the eonomics world of Britain, then, were basically admitting that they don't know what has gone wrong."*

In our opinion, at that time, various people were not aware that a financial crisis had erupted. But, taking a retrospective look, we can see now there were many signals that could indicate the occurrence of a crisis. The current situation is not the first financial crisis faced by humanity. History has shown us many other examples, and specialists have identified some common elements by assessing all previous similar events. In the literature, the following red flags are tackled:

- dramatic increases in the values of shares, properties and goods;
- household economies approach zero or become negative;
- increase in short-term loans granted to households, firms and banks;
- long-term stable growth, without major obstacle;
- increasing deficit of the current account;
- increase of bank assets and liabilities as a percentage in the GDP;
- increase of the loan indicators and frequencies of loan repayment;
- small risk premiums (credit margins, CDS margins), leading to an increase for risk seeking behavior.

The information contained by the following graphs could draw the attention of both financial specialists and general public.

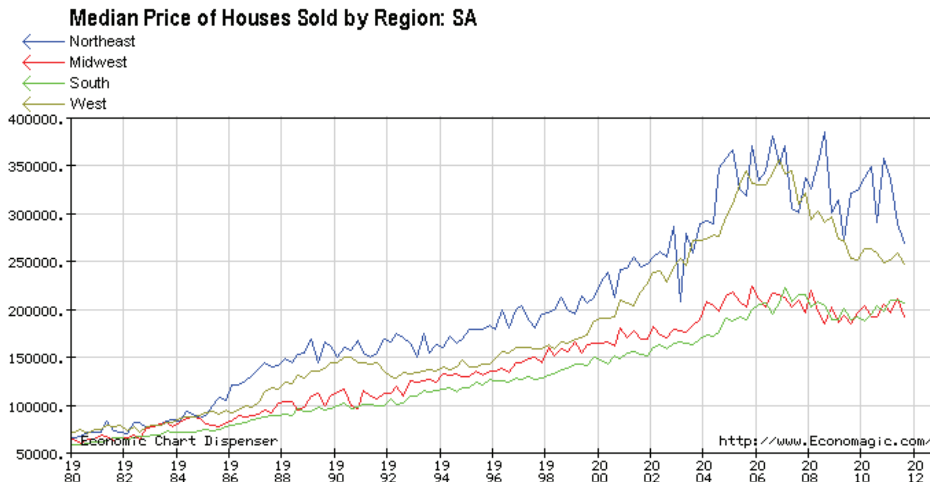


Figure 2: U.S. home prices in the region
Source: Processing of data published authors of Economagic Times Series

As can be seen from the graph above, house prices increased the most in the Northern or Western parts of the US. The Western region was the most affected by the financial crisis: the prices increased until 2007, then they decreased and this trend continues in the present. In the South and Middle West, prices have not skyrocketed, but they slightly decreased after the financial crisis hit.

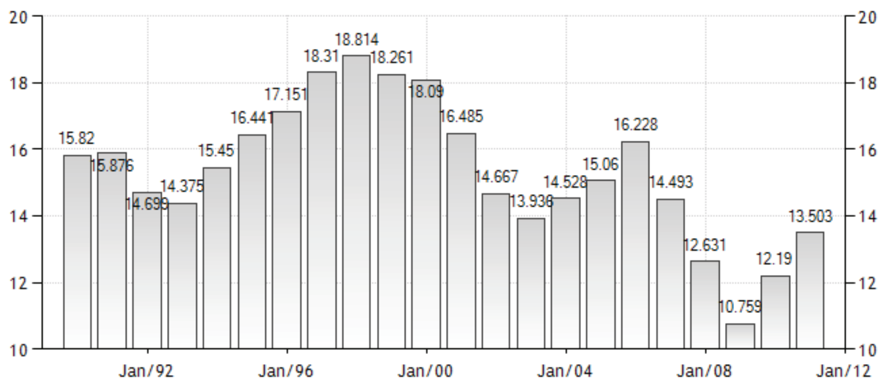


Figure 3: The evolution of gross national savings
Source: Processing of data published by authors of Trading Economics

The period analyzed was 1990-2012 and one can observe a decreasing trend of national economies. During the crisis, household savings dramatically decreased and, in the year 2009, they represented no more than 10% of the GDP.

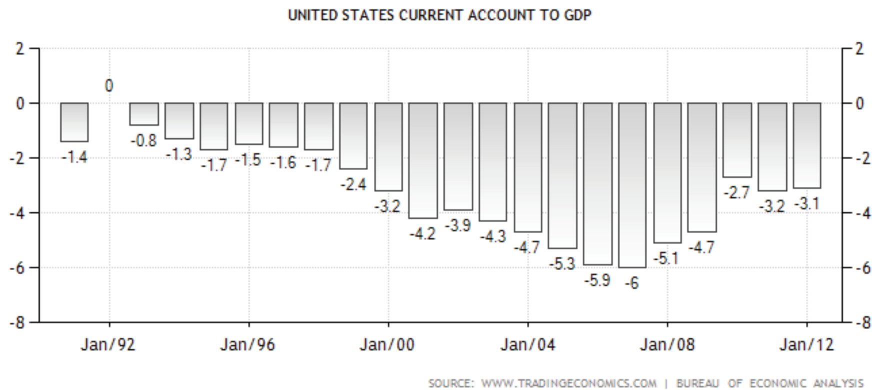


Figure 4: The evolution of current account (% of GDP)
Source: processing of data published on Trading Economics

As can be seen from the graph above, the current account deficit widened in the period anticipating the crisis, and even though this shortfall has decreased, it is still negative. The current account deficit translates into higher imports than exports, low savings rate and an economy oriented towards consumption, all these features are to be found in the US. As mentioned before, all the signs announcing a crisis were present, but few people have paid attention to them.

## 5. Loans in substandard conditions

An important issue which triggered the financial crisis and has contributed by far to the maintenance and enhancement of the crisis refers to the substandard loans, granted to borrowers who did not meet the conditions to access a bank loan.

Table 1: US household financial obligations (billion $)

| **Year** | Mortgages | Consumer loans | **Others** | **Total** |
|---|---|---|---|---|
| 1996 | 3,578 | 1,214 | 654 | 5,446 |
| 1997 | 3,818 | 1,272 | 735 | 5,825 |
| 1998 | 4,157 | 1,347 | 805 | 6,309 |
| 1999 | 4,531 | 1,446 | 911 | 6,888 |
| 2000 | 4,902 | 1,593 | 969 | 7,464 |
| 2001 | 5,379 | 1,703 | 958 | 8,040 |
| 2002 | 6,036 | 2,000 | 800 | 8,836 |
| 2003 | 6,894 | 2,103 | 868 | 9,856 |
| 2004 | 7,835 | 2,220 | 974 | 11,029 |
| 2005 | 8,874 | 2,321 | 989 | 12,184 |
| 2006 | 9,875 | 2,416 | 1,163 | 13,444 |
| 2007 | 10,539 | 2,555 | 1,273 | 14,367 |
| 2008 | 10,498 | 2,594 | 1,174 | 14,266 |
| 2009 | 10,335 | 2,479 | 1,255 | 14,069 |
| 2010:II | 10,150 | 2,419 | 1,344 | 13,913 |

Source*:* Johan A. Lybeck, 2011:p. 111

From the table above, it can be seen that the value of mortgage loans in the US has tripled. Even more remarkable, these mortgages were not considered premium or standard, but substandard loans. Practically, the value of these loans has increased from virtually zero to 1300 billion dollars, at the end of the century. In assessing the conditions for granting a credit, specialists use FICO scores, developed by Fair Isaac Corporation, a company that developed this model 50 years ago. FICO score starts at 300 and goes up to 850. A FICO score below 600 means the risk of failure is 51%, a score between 600 and 649 means the risk of failure is 31%. A customer is considered “standard” it he has a FICO score greater than 700. A standard loan has a FICO score of 725 and a substandard loan has a score of 628. These levels applied before the crisis, but in 2010, the scores were lowered due to many difficulties borrowers faced. Hence, the boundary between standard and substandard credits was set to 640. When establishing a FICO score, the bank took into consideration the payment history of the borrower, weighting 35% in the model. The history of the client was assessed at 15%, the income of the client at 30%, the degree of credit card use at 10% and the client’s work place at 10%. If the FICO score was low, the loan was classified as substandard. It is not surprising to see that, before these requirements were modified, many persons had not been able to get such a loan. The strategy was very simple: in the beginning, these loans had very profitable interest rates, in order to obtain as many clients as possible; after two years, the interest rate was recalculates (and, of course, increased); that was when problems usually appeared. The population was no longer able to pay the financial obligations, they had to leave their homes purchased through the mortgages. As a consequence, banks began registering losses due to investments linked to these mortgages.

## 6. Conclusions

The financial crisis has its roots in the US housing market. Through the securitization process, this crisis spread worldwide, not just in the United States and not just in the banks, but also the insurance companies. Many banks faced bankruptcy; some were saved by capital injection, others by nationalization. However, a giant – Lehman Brothers - was "left" to fail, and the consequences have been felt across the entire banking system. The crisis highlighted the fact that changes needed to be made in the regulation and supervision of banking institutions, by imposing stricter rules on derivatives, which were poorly regulated before this crisis.

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