

## *Summary*

This paper analyses the evolution of the regulation of over the counter derivatives and, particularly of central counterparties from the great financial crisis of 2008 to nowadays.

The first chapter analyses and describes the events that led to the great financial crisis with the aim to understand the reasons why financial markets are supposed to have detailed and stringent regulations and why the after crisis regulator favoured certain instruments to others.

The second chapter deals firstly with the various regulatory interventions that have taken place in the years following the great financial crisis in order to reorganize and strengthen the regulation of financial instruments and, in particular, of over the counter derivatives. Secondly, the chapter explains the importance of central counterparties and analyses how they operate, focusing on elements such as: standardisation, novation, clearing member requirements, initial and variation margins, the consequences of the default of one clearing member, and the risks associated with central counterparties.

The third and last chapter firstly analyses how the principles established on a global scale have been implemented in the United States and Europe. In detail, the chapter analyses the rules introduced by the Dodd-Frank Act and the EMIR for over the counter derivatives and central counterparties, focusing on the most relevant and innovative aspects of these regulations. Secondly, the chapter explains the harmonisation issue and how the Dodd-Frank Act and the EMIR deal with it.

## CHAPTER ONE

### THE GREAT FINANCIAL CRISIS

**Summary:** 1. *Introduction* – 2. *Causes of the GFC* – 2.1. *The real estate bubble* – 2.2. *The vulnerability of the financial system* – 2.3. *The too-big-to-fail behaviour* – 3. *Why did not anybody noticed and reactions to the GFC* – 3.1. *Great Britain, the British Academy* – 3.2. *United States, the New York Times* – 4. *Conclusions.*

#### 1. *Introduction*

This first Chapter aims at understanding the reasons why financial markets are supposed to have detailed and stringent regulations and why the after crisis regulator favoured certain instruments to others<sup>1</sup>. Before proceeding with the analysis of the current regulation system it is important to examine the past events that affected the development of the financial market regulation. In fact, the historical analysis of what happened can be considered as a fundamental instrument to understand the present regulatory situation and guide our thoughts about the reform of bank regulation. Therefore, in order to comprehend the present regulation system, it is necessary to consider one of the most important case in financial history, namely the great financial crisis (also known as “GFC”) of 2008 and, in particular: the events that led to the GFC, the reasons why it happened and the reactions of governments and legislators. These elements will be analysed hereafter.

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<sup>1</sup> Public authorities impose these rules on market participants in order to influence their behaviour and achieve certain regulatory goals or rationales. The governance framework for the financial market consists mainly of two different types of rules: financial regulation and financial law. In greater detail, financial regulation concerns the relationship between the society as a whole (*i.e.* the State) and financial market participants. In this context, the former impose behavioural rules in the form of orders and prohibitions on the latter. Transgressions are sanctioned, typically by imposing fines, additional conditions for the transgressors, further activity or by the withdrawal of the authorisation. Rules of financial regulation are typically enforced by a public authority (*i.e.* competent regulator, such as the parliament, a ministry, a dedicated authority or supervisor). Often, based on a mandate given by the sovereign, authorities are rule makers and rule enforcers at the same time.

## 2. *Causes of the GFC*

Speaking about the causes of the great financial crisis can be partially confusing due to all the particular things that had happened between 2008 and the following years. For this reason, it is necessary to focus just on the key elements of the GFC, describing them in the clearest and easiest way. The analyses will be based on the previous literature and particularly on books and articles written right after the explosion of the crisis.

The environment that led to the great financial crisis was the result of a varied and complex mix of events that have lasted for years, from a real estate bubble, to the too-big-to-fail behaviour, the insufficient political attention and the vulnerability of the financial system mixed together with a particularly lax regulation.

The great financial crisis started in the United States of America in 2008 and in few months spread all over the world. In this story there are plenty of players: lenders who granted easy credit, consumers who took on mortgages they could not afford and Wall Street companies who loaded up on mortgage backed securities (also known as “MBS”) without paying attention to the risks related to such financial instruments.

### 2.1. *The real estate bubble*

Despite the crisis has been caused by more than one event and/or element, first and foremost, the great financial crisis has been made possible by the political environment together with the absence of stringent rules and the lack of efficient control systems.

From a political point of view since the Nation’s founding, Americans have always preferred owning property rather than renting and Government’s policies have always supported this goal. The purpose is to underline the importance for

every American citizen to own a property and to create a compassionate society<sup>2</sup>. To achieve this goal the US Government introduced the homeowner policy<sup>3</sup>. To this end, banks were encouraged to decrease<sup>4</sup> interest rates<sup>5</sup> (as shown in the graph hereafter, graph “a”) and enabled a huge number of disadvantaged people to have access to mortgages<sup>6</sup>.

Graph “a” - interest rate level from 1999 to 2009<sup>7</sup> in US:



<sup>2</sup> President Hosts Conference on Minority Homeownership, George Washington University, Washington, D.C., October 15, 2002. As Clinton declared during one of his speeches in 2002: *«You see, we want everybody in America to own their own home. That’s what we want. This is an ownership society is a compassionate society»* - *«All of us here in America should believe, and I think we do, that we should be, as I mentioned, a nation of owners. Owning something is freedom, as far as I’m concerned. It’s part of a free society»*.

<sup>3</sup> JOHN BELLAMY FOSTER and FRED MAGDOFF, *The great financial crisis, causes and consequences*, Monthly Review Press, U.S., 2009, 22: *«Ultimately, we believe the great financial crisis raises questions that are primarily political rather than economic»*.

<sup>4</sup> President Hosts Conference on Minority Homeownership (nt. 2): *«Low interest rates, low inflation are very important foundations for economic growth. The idea of encouraging new homeownership and the money that will be circulated as a result of people purchasing homes will mean people are more likely to find a job in America. This project not only is good for the soul of the country, it’s good for the pocketbook of the country, as well»*.

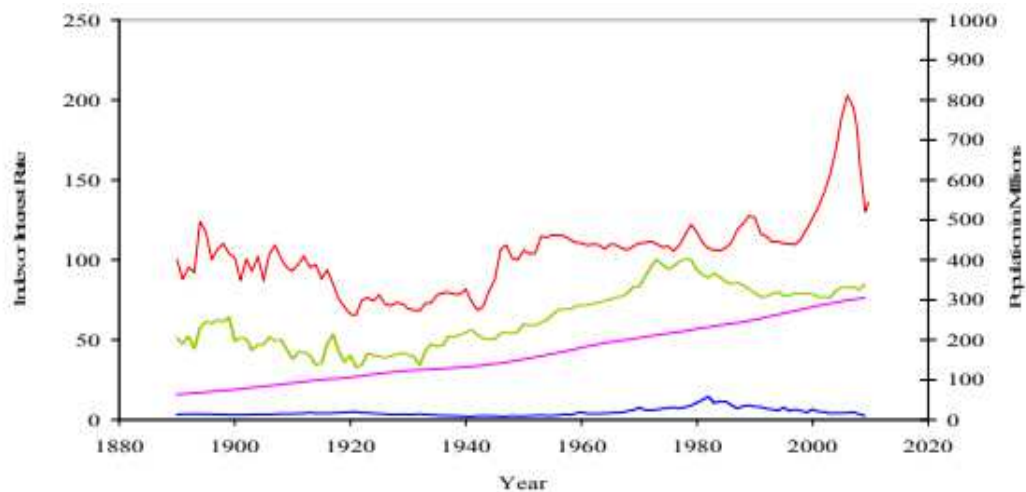
<sup>5</sup> PHILIP COGGAN, *The Money Machine - How the city works*, money and interest rate, Penguin Books Ltd, 2009, 17. According to the author, the interest rate is essentially the price of money; it is paid by the borrower in return for the use of the lender’s money.

<sup>6</sup> President Hosts Conference on Minority Homeownership (nt. 2): *«To open up the doors of homeownership there are some barriers and I want to talk about four that need to be overcome. First, down payments. A lot of folks can’t make a down payment. They may be qualified. They may desire to buy a home, but they don’t have the money to make a down payment»*. *«Last June, I issued a challenge to everyone involved in the housing industry to help increase the number of minority families to be home owners. And what I’m talking about, I’m talking about your bankers and your brokers and developers, as well as members of faith-based community and community programs. And the response to the homeowners challenge has been very strong and very gratifying. Twenty-two public and private partners have signed up to help meet our national goal. Partners in the mortgage finance industry are encouraging homeownership by purchasing more loans made by banks to African Americans, Hispanics and other minorities»*.

<sup>7</sup> FRED, Federal Reserve Bank of St. Louis, *International Monetary Fund, Interest Rates, Discount Rate for United States*, March 3, 2019. Available at: <https://fred.stlouisfed.org/series/INTDSRUSM193N>.

The homeowner policy represented the leading cause of the decline of lending standards and the increase of loan incentives (such as easy initial terms and long-term trend of rising housing prices). In this context, the presence of loan incentives encouraged borrowers to assume difficult mortgages<sup>8</sup> and banks to grant loans to people without collateral: «*at the height of the housing bubble, banks were eager to make home loans to nearly anyone capable of signing on the dotted line*»<sup>9</sup>. During the policy period, loans were released to people, entrepreneurs and companies that were clearly unable to pay the mortgage. As a result of the increase in the demand of houses, prices started to grow, and buying a house became more and more expensive, as represented in the graph below (graph “b”) real estate properties were overestimated and people needed to borrow huge amounts of money to buy them.

Graph “b” - inflation-adjusted house prices from 1890 in US<sup>10</sup>:



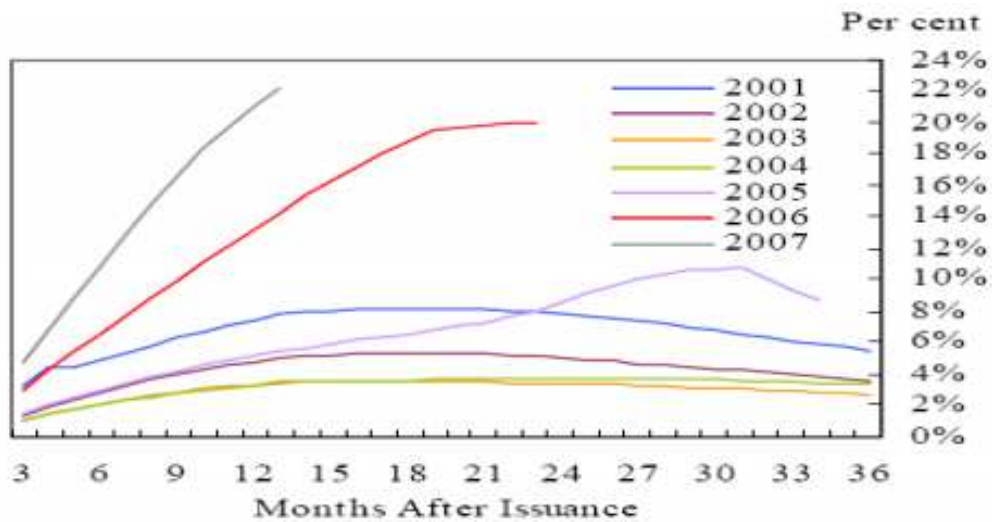
<sup>8</sup> AMIR N. R. ARMANIOUS, *Scrutiny of the 2008 Global Financial Crisis: Causes, Features, Consequences and Remedy Tools*, June 25, 2011, 3: «*What emerges is that borrowers believe that they would had be able to quickly refinance the loans at more favourable terms*».

<sup>9</sup> ANDREW ROSS SORKIN, *Inside the battle to save Wall Street. Too big to fail, “too good to put down”*, 4.

<sup>10</sup> Standard&Poor’s, Case Shiller Index.

Nevertheless, as a consequence of lenders and government low standards after a few months a lot of un-creditworthy borrowers started to interrupt their payments (graph “c”) and consequently banks started to require the property of the buildings.

Graph “c” - percentage of default per year in US<sup>11</sup>:

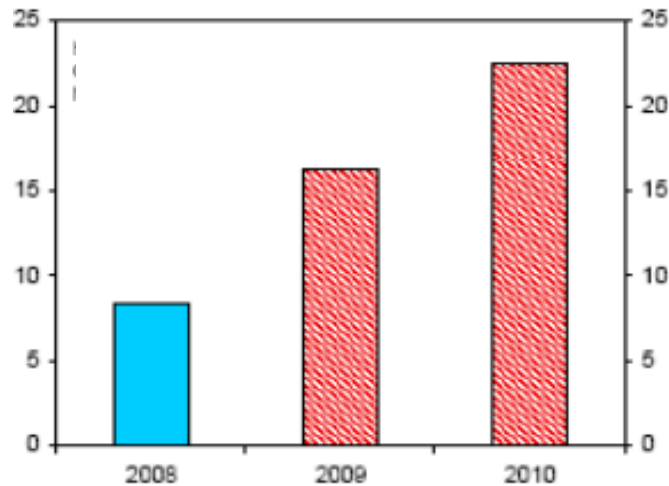


Accordingly, as represented in the graph below (graph “d”), voluntary and involuntary foreclosures increased the number of houses on the market and, as a consequence, home prices started to decrease and buildings started to worth less than the mortgage itself. The growth in the number of houses and the decrease in their value have led to negative equity.

Graph “d” - homeowners with negative equity who own more on their mortgages than their homes are worth<sup>12</sup>:

<sup>11</sup> Moody’s investors service. Available on: [www.moodys.com](http://www.moodys.com).

<sup>12</sup> International Monetary Fund (also known as “IMF”). Available on: [www.imf.org](http://www.imf.org).



Due to the growth in the number of available houses in the property market «at the peak before the crash, the median sale price for a home in the US was 200.000 Dollars. While by the time the market reached bottom prices had dropped 29%, to 140.000 Dollar»<sup>13</sup>. Therefore, in the event of non-payments, on the one hand, the bank acquires the property and has the opportunity to sell it and recover the money that the borrower still had to pay back, but, on the other one, the bank suffers a loss due to the difference between the loan given to the debtor (when the house value was higher) and the current value of the house.

Furthermore, the decrease in the value of houses encouraged all people that understood that the amount of money that they still owed to the bank was higher than the value of the house itself to interrupt the payments and leave their houses<sup>14</sup>. In fact, at that time, thanks to the negative equity created by the decrease of houses value, it was convenient to run away and leave the property

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<sup>13</sup> KIRAN DHILLON, *Here's A Look At The Housing Market Eight Years After The Collapse*, August 1, 2014. Available at: <https://www.forbes.com/sites/kirandhillon/2014/08/01/heres-a-look-at-the-housing-market-eight-years-after-the-collapse-3/>

<sup>14</sup> This phenomenon was so widespread that a group of American citizen created a company accompanied by a really popular website called <http://www.youwalkaway.com> with the task of explaining how to abandon a house when its value falls below the mortgage one.

instead of settling the mortgage and become owners of a house that worth much less than the amount they had to pay<sup>15</sup>.

The devaluation of the housing market led to the shortage of liquidity and endangered the bank system. After this period the entire financial system was frozen, foreclosures reduced the cash flowing into banks and the decrease of liquidity caused big losses to financial institutions. At that time many banks decided to opt for recapitalization and the institutions that were not enough capitalized to lend money from other institutions faced a big economic downturn.

The situation created by the homeownership policy had been amplified by the setting up of financial innovations that brought homeowners and investors together, allowing the creation of interconnections between various banks and all the other market players<sup>16</sup>.

Traditionally, banks lend money to homeowners for their mortgages and retain the risk of default or credit risk<sup>17</sup>, however, due to financial innovations, during the crisis period, banks were selling rights to the mortgage payments and relating credit risk to investors, through a process called securitization<sup>18</sup>. Securitization can be regarded as a way to pack and resell assets around the globe<sup>19</sup>. It is an instrument that enables banks to bundle loans into pools of assets and sell them to investors through instruments called asset backed securities (also known as “ABS”). Securitization permits to the banks to: move the securitized loans off their books and take on more loans. What is relevant is that, during the

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<sup>15</sup> FRANCESCO GIAVAZZI and ALESSIA AMIGHINI, *Blanchard, Macroeconomia, la crisi del 2007*, Il Mulino, 2009.

<sup>16</sup> ANDREW ROSS SORKIN (nt. 9), 5: «*At that time, Wall Street believed fervently that its new financial products had diluted, if not removed, the risk*». «*Instead of holding on to a loan on their own, the banks split it up into individual pieces and sold those pieces to investors, collecting enormous fees in the process*».

<sup>17</sup> TOMASZ R. BIELECKI and MAREK RUTKOWSKI, *Credit risk: Modelling, valuation and hedging*, Springer, 3: «*a default risk is a possibility that the counterparty in a financial contract will not fulfil a contract commitment to meet her/his obligations states in the contracts*». «*We mean the risk associated with any kind of credit-linked events, such as: changes in the credit quality, variations of credit spreads and the default events*».

<sup>18</sup> AMIR N. R. ARMANIOUS (nt. 8), 2.

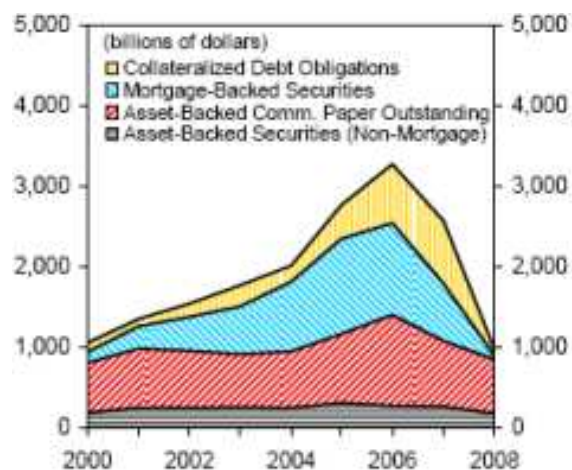
<sup>19</sup> PHILIP ARESTIS, ROGÉRIO SOBREIRA and JOSÉ LUIS OREIRO, *The financial crisis, origins and implications*, introduction, 1.



period before the crisis, this process seemed to spread risk, and that everybody believed that *«if the loans turned bad, the loss would not be taken by the bank»*<sup>20</sup>. The issue was that banks thought they would not be affected by any loss and this led financial institution to bear a higher risk and to greatly reduce their interest to check the quality of their clients.

The instruments purchased by the investors were mainly mortgage backed securities and collateralized debt obligations (also known as “CDO”); their dissemination inside and outside the territory of the United States was so impressive and the phenomenon was so widespread that *«in mid-2008, more than 60% of all U.S. mortgages were securitized»*<sup>21</sup>. Such financial innovation played a vital role for the diffusion of the GFC worldwide - and mainly in Europe - because they enable investors all over the world to invest in the US housing market as shown in the graph below (graph “e”).

Graph “e” - derivatives diffusion in the all over the world during the years between 2000 and 2008 (unit of measurement: billions of US Dollars)<sup>22</sup>:



<sup>20</sup> PHILIP COGGAN (nt. 5), 32.

<sup>21</sup> AMIR N. R. ARMANIOUS, (nt. 8), 2.

<sup>22</sup> International Monetary Fund (also known as “IMF”). Available on: [www.imf.org](http://www.imf.org).

To understand what happened and figure out the nature of these new financial instruments it is necessary to comprehend their nature and their usage.

- (i) An MBS is an ABS secured by a collection of mortgages with different qualities and risks. The various compositions of MBS enable the investors to see only the final products since they do not have enough information to value the characteristics of each building block. Consequently, investors have to rely on credit rating agency (also known as “CRA”) evaluations.<sup>23</sup> Credit rating agencies’ evaluations are supposed to represent the risk related to the analysed mortgage backed securities, but as discussed above, at that time, the system was so complex that the evaluations were not completely truthful and reliable.

Furthermore, many problems derived from the behaviour that *«in theory, because the pools were diversified, the losses would be predictable»*, but conversely the reality was that the instruments were often composed by risky elements and so *«risk were concentrated, not diversified»* in fact *«if one part of the portfolio was likely to default, so was the rest»*<sup>24</sup>.

- (ii) A CDO is a structured financial product composed by a bundle of certain classes of ABS into a special purpose vehicle (also known as “SPV”) or

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<sup>23</sup> PETERSON, CHRISTOPHER LEWIS, *Over-Indebtedness, Predatory Lending, and the International Political Economy of Residential Home Mortgage Securitization: Comparing the United States’ Subprime Home Mortgage Lending Crisis to Home Finance in the United Kingdom, Germany, and Japan*; January 11, 2008. Available at: <https://ssrn.com/abstract=1083184>: *«The credit rating agency investigates the credit risk of the underlying mortgages as well as the risks posed from pooling the mortgages together. Credit ratings on each tranche are essential, since they obviate the need for each individual investor to do due diligence on the underlying mortgages in the pool. The rating agency will typically require some form of credit enhancement on some tranches to assign them higher investment ratings»*.

CRA’s are classified as “gatekeepers”, namely financial intermediaries that operate between issuers and investors. Thanks to their position CRA’s have a potentially valuable role to play in capital markets as a mechanism for investor protection. Indeed, credit rating agencies provide investors with certification or verification services through reputational capital model. The traditional role of gatekeepers is to deal with asymmetric information and other market failures (*i.e.* information asymmetry and systemic risk), in order to promote market efficiency and efficient resource allocation. One of the predominant mechanisms for dealing with information asymmetry is information disclosure operated by the issuers (at the stage when securities are first offered to investors and via continuing disclosure obligations). However, during the GFC (and even in recent years) the regulator assisted to a high number of gatekeeper’s failures (*i.e.* underestimation of the credit risk of structured credit products) that have cast doubt on their ability to fulfil their role.

<sup>24</sup> PHILIP COGGAN (nt. 5), 33.

special purpose entity (also known as “SPE”)<sup>25</sup>. Special purpose entities allow large corporations to meet specific objectives by way of obtaining finances, transferring risk and performing specific investment activities and reallocate the financial instruments to investors willing to take on those risks. Speaking about SPVs it is important to underline that these vehicles basically isolate or securitize assets for reducing bankruptcy costs<sup>26</sup>. They are created by a financial institution (“sponsor” or “originator”) who owns a pool of mortgage loans to hold a defined group of assets and to protect them from being administered as property of a bankruptcy estate<sup>27</sup>. The SPV protects the originator from possible future insolvency risks, in fact, in theory *«the insolvency of any such SPV should have no impact on the bank which originated the loans»*<sup>28</sup>. Furthermore, special purpose entities are considered “bankruptcy remote entities” in the sense that they are designed with the aim to eliminate, to the extent possible, every risk to become subject to a proceeding under the bankruptcy code<sup>29</sup>. Moreover, a special purpose vehicle is an off balance sheet vehicle and is used by the originator to move

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<sup>25</sup> VINK, DENNIS and THIBEAULT, ANDRÉ E.; *ABS, MBS and CDO Compared: An Empirical Analysis*, September 9, 2008, The Journal of Structured Finance, Vol. 14, 2008, 27-45: *«The primary objective of the SPV is to facilitate the securitization of the assets and to ensure that the SPV is established for bankruptcy purposes as a legal entity separate from the seller»*.

<sup>26</sup> GORTON, GARY B. and SOULELES, NICHOLAS S., *Special Purpose Vehicles and Securitization*, September 1, 2005, FRB Philadelphia Working Paper No. 05-21, 2-3. Available at SSRN: <https://ssrn.com/abstract=713782>

<sup>27</sup> PALOIAN V. LASALLE BANK NAT'L ASSN (In re Doctors Hospital of Hyde Park, Inc.), 507 B.R. 558, 701, 702 (N.D. Ill. 2013).

<sup>28</sup> House of Commons - Treasury Committee, *Financial Stability and Transparency, Sixth report of session 2007 - 2008*, 19.

<sup>29</sup> KETTERING KENNETH C., *True Sale of Receivables: A Purposive Analysis*. American Bankruptcy Institute Law Review, Vol. 16, pp. 511-562, August 12, 2008, 555. Available at SSRN: <https://ssrn.com/abstract=1337054>: *«A direct waiver by the SPE of its right to file a bankruptcy petition would be unenforceable (and in any case would be of no avail against other means of entering bankruptcy, such as an involuntary petition). The possibility of the SPE entering bankruptcy is instead countered by a combination of stratagems, typically along the lines of the following: (a) voluntary bankruptcy is countered by provisions in the SPE's organic documents requiring unanimous vote of the SPE's board of directors to authorize a bankruptcy filing, and requiring one or more members of the board to be independent of the Originator; (b) involuntary bankruptcy is countered by provisions in the SPE's organic documents authorizing it to engage only in activities necessary to the securitization transaction and by obtaining waivers of the right to file an involuntary petition from third parties who deal with the SPE; (c) substantive consolidation with the Originator is countered by covenants requiring the SPE to comply with proper corporate formalities, to avoid commingling its assets with those of the Originator, and otherwise to avoid actions that would permit the invocation of any of the usual grounds for substantive consolidation»*.

the abovementioned mortgage loans and their credit risk off its books<sup>30</sup>. It is notable that, even if legal science considers special purpose vehicles off balance sheet vehicles<sup>31</sup> it actually happens that: «*if a securitization fails to transfer meaningful risk, the securitized assets and debt are added back to the originator's balance sheet and several financial and cash flow ratios are adjusted accordingly*»<sup>32</sup>. Moreover, there are many companies whom retain the subordinated interest in the transaction. Consequently, «*various financial ratios including leverage and cash flows are adjusted to account for securitization debt as the equivalent of on-balance-sheet secured borrowing*»<sup>33</sup>.

- (iii) Going back to collateralized debt obligations, it is worth noting that the name given to these financial instruments comes from the pooled assets (*i.e.* mortgages, bonds or loans) that are essentially debt obligations that serve as collateral for the CDO. The tranches in collateralized debt obligations vary substantially in their risk profiles; this latter risk is evaluated by a credit rating agency, which has the task to split the collateralized debt obligations into three different tranches, according to the various combinations of risk and return. Credit rating agencies issue to retail and institutional investors information that assist them in determining whether the issuers of the financial instruments will be able to meet their obligations. In order to do that, CRA issues independent assessments and objective analyses of all the companies and the countries that are issuing securities. Credit rating agencies played a considerable part in the development of the great financial

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<sup>30</sup> GELPERN, ANNA and LEVITIN, ADAM J., *Rewriting Frankenstein Contracts: The Workout Prohibition in Residential Mortgage-Backed Securities*, 2 December, 2009. Southern California Law Review, Vol. 82, 1077-1152, 2009; Georgetown Public Law Research Paper No. 1323546; CLEA 2009 Annual Meeting Paper; Rutgers School of Law-Newark Research Papers No. 33, 1081. Available at SSRN: <https://ssrn.com/abstract=1323546>.

<sup>31</sup> House of Commons - Treasury Committee, *Financial Stability and Transparency, Sixth report of session 2007 – 2008*, 19 and EILIS FERRAN and LOOK CHAN HO, *Principles of Corporate financial law*<sup>2</sup>, 2014, 23.

<sup>32</sup> Moody's Investors Service, *Special Comment: Demystifying Securitization for Unsecured Investors*, at 6 n.15, January 2003. Available at: <https://www.moodys.com/>: «*In effect, Moody's views the securitization as the equivalent of an on-balance-sheet secured financing*».

<sup>33</sup> KETTERING KENNETH C., *Securitization and Its Discontents: The Dynamics of Financial Product Development*, August 1, 2007. Cardozo Law Review, Vol. 29, pp. 1553-1728, 2008, 1575. Available at SSRN: <https://ssrn.com/abstract=1012937>.

crisis, as indeed, investors relied blindly on the advice of these Agencies without consulting third parties and consumer choose which financial instrument subscribe depending the risk appetite selected by the CRA.

More precisely, collateralized debt obligations can be grouped in three different tranches, senior tranches, mezzanine tranches, and equity tranches. Senior tranches are characterized by a higher credit rating and a lower coupon rates, in fact in case of default they have first priority on payback. Mezzanine tranches are designed with the aim to create a good balance between risk and return. Equity tranches are marked by higher coupon rates to compensate for their higher default risk.

What emerged by the analysis of all those new financial instruments is that securitization is neither good or bad in principle, it is just a way to diversify risk and persuade more investors to give loans to companies and families. The point was that the system created was so complicated and opaque that - without stringent rules to apply - even for credit rating agencies was challenging to value the risk of default of those new financial instruments. Another issue connected with credit rating agencies was that the evaluation system - the so called “issuer pays” business model - was characterized by a big conflict of interest<sup>34</sup>; in fact most credit rating agencies were paid to rate the credit-worthiness of financial instruments by the same financial institution that issued them<sup>35</sup>. Consequently, both investors and banks did not have any idea about the riskiness of the operation (investors believed their investments were secured and banks were convinced that their situation was stable). As a consequence of this opaque system, at a certain point this complicated and unregulated scenario made it difficult to evaluate the solvency of banks and their likelihood to fail. At the end,

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<sup>34</sup> J. REGA, *The Rating Game*, M-Lex Magazine, July September 2011, 34, in his opinion the situation of CRAs is comparable to food/drugs safety Agencies that are remunerated by food and drug manufacturers or to teachers paid by their students.

<sup>35</sup> PETIT NICOLAS, *The Subprime and Enron scandals, Credit Rating Agencies, the Sovereign Debt Crisis and Competition Law*, August 17, 2011. Available at SSRN: <https://ssrn.com/abstract=1909910>. This model took CRAs to assign high investment grades to junk bonds just a few days before the crisis began to unravel.

no one knew exactly how reliable the balance sheets of the financial institutions were.

Moreover, the situation was compounded by the fact that banks owned various slices of these financial instruments and that the entire bank network<sup>36</sup> was characterized by stringent interconnections between all the main institutions all over the world; it meant that *«every firm was now dependent on the others and many didn't even know it. If one fell, it could become a series of falling dominoes»*<sup>37</sup>.

The bank lending survey conducted in the United States of America led a lot of European investors to subscribe financial instruments based on American mortgages and created the conditions for the diffusion of the great financial crisis, allowing the spreading of its effects from the American to the European economy.

## 2.2. *The vulnerability of the financial system*

Although America's housing system collapse played a big role in the development of the scenario that led to the great financial crisis, other factors contributed to the deterioration of the situation<sup>38</sup>. One of the factors that should be considered is the development and the diffusion of financial instruments known as credit derivatives (also known as "derivatives")<sup>39</sup>. Derivatives are financial assets whose value is based on a market variable or on an underlying

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<sup>36</sup> These interconnections introduced the need to strengthen network resilience. The financial market is an enormous and highly complex network with highly interdependent and connected players. These characteristics increase the risk of contagion in case of crisis and, moreover, render the effects of crisis nearly impossible to predict.

<sup>37</sup> ANDREW ROSS SORKIN (nt. 9), 20.

<sup>38</sup> ERIC HELLEINER, STEFANO PAGLIARI, IRENE SPAGNA, *Governing the world's biggest market, The politics of derivatives regulation after the 2008 crisis*, 28-29, p. 43: *«While OTC derivatives and in particular CDS did not "cause" the crisis by themselves, they were a key enabling factor that - in combination with (i) securitized mortgage debt, (ii) the financial innovations it triggered, and (iii) other weakness of the financial system - led to the near collapse of the global economy»*.

<sup>39</sup> SKEEL, DAVID A. AND PARTNOY, FRANK, *The Promise and Perils of Credit Derivatives*. University of Cincinnati Law Review, Vol. 75, p. 1019, 2007; U of Penn, Inst for Law & Econ Research Paper No. 06-22; U of Penn Law School, Public Law Working Paper No. 06-36; San Diego Legal Studies Paper No. 07-74. Available at SSRN: <https://ssrn.com/abstract=929747>: *«We define credit derivatives as financial instruments whose payoffs are linked in some way to a change in credit quality of an issuer or issuers»*.

asset and its future price. It is worth noting that there are many different types of derivatives and that each of them is characterized by different features (among which the structure and the objective). To give an idea of the incredible number of derivative contracts which have been developed during the years before the crisis, we will briefly analyse a bunch of the best-known, namely: forward, future and option contracts.

A forward contract is an agreement that obliges two parties to respectively buy or sell a specific asset on a specific future date for a defined price. As evidenced the main characteristic of forwards is that the price and the date are predetermined inside the contract. A future contract is a standardized forward contract exchange traded. The standardization of the contract refers to the quality and the quantity of the underlying assets and to the terms of the contract<sup>40</sup>. An option contract is a contract which serves to grant the user the right to buy or sell the underlying asset on a future date at a predetermined price (also called the “strike price”). We can divide options in two different categories: the “call”, which gives the right to buy and the “put”, which gives the right to sell.

What is concerning is that even prior to the crisis the market was dominated by a strong presence of derivatives (such as, for example: forward, futures, options and swaps) and that their dissemination combined with the lack of an unambiguous regulation led to the emergence of several issues<sup>41</sup>. The huge variety of distinct types of derivatives has made the development of a clear regulation difficult. In order to understand the dangerousness of derivatives

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<sup>40</sup> Despite forward and future contracts both involve the agreement to buy and sell assets at a future date they are characterized by really different features. In fact, the price of the asset of a forward contract is set when the contract is signed while the price of the asset of a future contract is established on a daily basis. Moreover, a forward is a private agreement between two parties the details of which are generally kept between the buyer and the seller, rendering their value hard to predict. The fact that forward are traded privately increase the counterparty risk. On the contrary, future contracts are traded on an exchange. In this respect, thanks to the presence of CCPs that guarantee the transactions, their probability of default is drastically lower. These features render the market of futures really liquid.

<sup>41</sup> BUFFET, WARREN E.; *Chairman's Letter. Berkshire Hathaway Inc. 2002 Annual Report*. Available at: <http://www.berkshirehathaway.com/2002ar/2002ar.pdf>: «Derivatives are financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal».

hereafter we will focus on the feature characteristics of over the counter (also known as “OTC”) derivatives and, particularly on credit default swap (also known as “CDS”).

As outlined above, the main feature of derivatives is that they serve an enormous number of functions. Their usage goes from the protection against other assets’ price moves to the speculation on price changes<sup>42</sup>. What is important to understand to find out why derivatives played such a big role in the development of the scenario that took to the GFC is that these instruments can be traded in two completely different ways: on an exchange and regulated market or bilaterally, over the counter. In the first case the credit risk is much lower than in the second, in fact while in the exchange traded market there are standardized terms whose details are publicly recorded, OTC deals are tailored and kept private by the counterparties. The main feature of over the counter contracts is that they are beyond the sight of regulators, «*CDS are not currently traded on an exchange, and are not regulated by any U.S. governmental authority*»<sup>43</sup>. The absence of any kind of control and authority intervention implies that the counterparties are immediately exposed to each other’s risk of default<sup>44</sup>.

Among the most common over the counter derivatives there are credit default swaps: a particular kind of derivative, fashioned privately, traded and used by investors to insure their debts against default<sup>45</sup>.

CDS emerged as a class of over the counter products in the mid-nineties and since then, the growth of the market has been staggering. In fact, as noted by the European Central Bank (also known as “ECB”), the CDS market rose by 900% in the three years to the end of 2007, by which point it had a gross nominal

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<sup>42</sup> PHILIP COGGAN (nt. 5), p.32.

<sup>43</sup> DICKINSON ERIC, *Credit Default Swaps: So Dear to Us, So Dangerous*, 20 November, 2008, 3. Available at SSRN: <https://ssrn.com/abstract=1315535>

<sup>44</sup> ERIC HELLEINER, STEFANO PAGLIARI, IRENE SPAGNA, (nt. 38), 28-29.

<sup>45</sup> PHILIP COGGAN (nt. 5), p.155: «*One party pays a premium to another; in return, the seller agrees to pay up if the borrower defaults*».



value of 58 trillion Dollars<sup>46</sup>. The exaggerated usage of these instruments has been proved to be connected with the fact that credit default swaps at the same time: (i) improved the security of CDO, in fact, if the mortgage defaulted insurances were supposed to pay, and (ii) permitted to the banks to move the risk off their books and to invest more. Legally speaking, a CDS is a bilateral contract where the rights and obligations of the parties do not derive from the price of a commodity or a currency but from the credit risk of a reference entity or asset<sup>47</sup>. Under a credit default swap contract a buyer, in return for a premium, contracts with a counterparty and buys protection against particular credit events. Basically CDS buyer pays a fee in regular intervals and, upon a certain credit event, he receives the difference between the par value and the recovery value of the bonds, in fact the difference between its face value and the projected value that would be recovered in case of liquidation<sup>48</sup>.

Considering the above evaluations, a credit default swap could be considered as a more flexible form of bond insurance, namely an insurance policy that a bond issuer purchases with the aim to guarantee the repayment of the principal and of all the associated interest payments to the bondholders in case of default. The main difference between a credit default swap and a bond insurance is that while the bond insurance contract is strictly connected to the loan or bond it protects against default (the buyer of the bond insurance owns the protected bond) the credit default swap is not necessarily connected to it. Indeed, a consumer/client is enabled to buy a CDS without owning any bond to insure against default. In this latter case the credit default swap is “naked” or “uncovered” and can be used by the buyer in order to make profit *«purchase of a CDS is therefore motivated not only by hedging but also by arbitrage and speculative*

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<sup>46</sup> EUROPEAN CENTRAL BANK/EUROSISTEM, *OTC Derivatives and Post-Trading Infrastructures*, September 2009, 13.

<sup>47</sup> J. BENJAMIN, *Financial law*, Oxford OUP 2007, 65.

<sup>48</sup> ROBERTO A. DE SANTIS, *Working Paper Series A measure of redenomination risk, 1785*, April 2015, 10. Available at: <https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1785.en.pdf>

reasons»<sup>49</sup>. In 2009, an estimated 80% of credit default swaps were bought by investors not directly exposed to the credit risk referenced in the CDS. Uncovered credit default swaps are often used solely to speculate or gamble on companies but they can also be used to manipulate markets and undermine the health of public companies<sup>50</sup>.

Usually the standard process contained in the agreement between counterparties states that the CDS's collateral must be adjusted on a daily basis, as the value of the agreement changes, becoming more or less likely to default. This practice is used to eliminate or, at least, reduce the counterparty risk that is «*the risk that the counterparty to a financial contract will default prior to the expiration of the contract and will not make all the payments required by the contracts*»<sup>51</sup>. Protection against counterparty risk is fundamental when a party enters into a over the counter contract; in fact while for exchange-traded Derivatives a party has the chance to exchange it in the relevant market and therefore it is likely that it is going to gain the (entire or partial) value of the contract, for contracts privately negotiated there is not guarantee in such sense; it means that both the counterparties are subject to the counterparty risk. Another standard practice adopted to protect the counterparties is to increase the collateral in case of deterioration of the collateralized debt obligations. The abovementioned deterioration could be caused by several events, including natural reasons, debtor's default or even the downgrade of the rating released by a credit rating agency. Note that the measure of the collateral is based primarily on the rating of the credit rating agency; for instance, a company that has received a "Triple-A" rating will post less collateral than a "Triple-B" rated company.

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<sup>49</sup> BRADY DENNIS and ROBERT O'HARROW, *A crack in the system*, The Washington Post, 30 December 2008, 278-279.

<sup>50</sup> SHADAB, HOUMAN B., *Guilty by Association? Regulating Credit Default Swaps*, March 2009. Entrepreneurial Business Law Journal, Vol. 4, No. 2, 2010, 458; Mercatus Research Paper, March 2009. Available at SSRN: <https://ssrn.com/abstract=1368026>; «On September 19, 2008, the SEC (Securities and Exchange Commission) announced a sweeping investigation relating to market manipulation using CDSs with fifty derivatives-related investigations reportedly under way as of May 2009».

<sup>51</sup> ZHU, STEVEN H. and PYKHTIN, MICHAEL, *A Guide to Modelling Counterparty Credit Risk*, GARP Risk Review, July/August 2007. Available at SSRN: <https://ssrn.com/abstract=1032522>.

What rendered credit default swap so dangerous was the critical role they played in the lead-up to the Crisis; in fact, thanks to their reputation, they facilitate the accumulation of excessive risk by investors who believed that by dint of CDS they would be insured against the risk of default. Thanks to this mechanism, they created a false sense of security and they encouraged investors to believe that this risk could be sufficiently diversified. Moreover, this situation was further intensified by the opacity of the market itself, caused by the absence of a decent financial regulation and by the lack of transparency regarding counterparty exposure<sup>52</sup>. At that time, as a result of the presence of new and unregulated financial instruments neither the financial institutions nor the regulator were able to value the riskiness of credit default swap. As the US Department of the Treasury stated, the risk characteristics of CDS proved to be «*poorly understood even by the most sophisticated of market participants*»<sup>53</sup>.

Many banks, funds and investors all over the world were buying these products, convinced that credit default swap would have protect them, therefore when the crisis broke out the high degree of interconnectedness created by credit default swap between the actors in the world market increased the contagion.

In 2008, based on net premiums underwritten, American International Group (also known as “AIG”), was the largest insurance company in the United States, indeed it was the largest health insurer and life insurer and the second largest property and casualty insurer in US<sup>54</sup>. On February 28, 2008, AIG announced 2007 earnings of 6.20 billion Dollars or 2.39 Dollars per share<sup>55</sup>. Nevertheless, after scarcely seven months, AIG was on the brink of bankruptcy and, on September 16, 2008 the Federal Bank of New York rescued the company

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<sup>52</sup> ERIC HELLEINER, STEFANO PAGLIARI, IRENE SPAGNA (nt. 38), p. 43.

<sup>53</sup> US Department of the Treasury, *Financial Regulatory Reform, A New Foundation: Rebuilding Financial Supervision and Regulation*, 47.

<sup>54</sup> DONALD L. KOHN (Vice Chairman, Board of Governors of the Federal Reserve System), *American International Group: Examining What Went Wrong, Government Intervention, and Implications for Future Regulation*: Hearing Before S. Comm. on Banking, Housing & Urban Affairs, 111th Cong. 1–2 (2009). Available at: [http://banking.senate.gov/public\\_files/KohnStmtMarch52009.pdf](http://banking.senate.gov/public_files/KohnStmtMarch52009.pdf).

<sup>55</sup> SJOSTROM, WILLIAM K, *The AIG Bailout*, 1 November, 2009, Washington and Lee Law Review, 2009, Vol. 66, 943. Available at SSRN: <https://ssrn.com/abstract=1346552>.

through an 85 billion Dollars loan in exchange for an equity stake of 79.9% in the firm<sup>56</sup>. As a result, one of the most successful companies in business history had been almost entirely nationalized<sup>57</sup>.

In particular, American International Group, before and during the crisis was issuing credit default swap for protecting investors who subscribed other securities against the risk of default of their issuer. In other words CDS were issued by insurance companies (such as AIG) in order to transfer the credit risk of collateral debt obligation<sup>58</sup>. The prices required from AIG in order to insure one or more financial products reflected the probability of their potential default. Since the risk was supposed to be equal to zero the fees required by insurance companies were not relevant. Among the reasons why American International Group was under-pricing its insurance protection was the high rating given from credit rating agencies to the insured financial instruments<sup>59</sup>. In fact, during the years before the great financial crisis the idea that real estate investments were safe because the ratings issued by credit rating agencies were high was rampant (*i.e.* securities had a triple A - AAA - rating)<sup>60</sup>. The functioning of credit default swap has made these financial instruments extremely convenient for banks and financial institutions, indeed their cost was quite low, they rendered bonds almost risk-free and they reduced the equity level required for the underlying bond.

The issue was that when banks or investors insured CDOs the insurance seller (in this case AIG) became the bond owner and in case of default of the latter instrument it had to pay the counterparty. In this respect, it is notable that AIG, thanks to its legal classification of insurance, was not submitted to any

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<sup>56</sup> LAURENT L. JACQUE, *Global derivative debacles, from the theory to malpractice*, 278 - 283.

<sup>57</sup> DICKINSON ERIC, (nt. 43).

<sup>58</sup> CECCHETTI STEPHEN G., GYNTELBERG JACOB and HOLLANDERS MARC, *Central Counterparties for Over-the-Counter Derivatives*, September 2009. BIS Quarterly Review, September 2009. Available at SSRN: <https://ssrn.com/abstract=1472960>: «By end-June 2008, AIG had taken on \$446 billion in notional credit risk exposure as a seller of credit risk protection via credit default swaps (CDS)».

<sup>59</sup> BRADY DENNIS and ROBERT O'HARROW (nt. 36), p. 275: «The models suggested that the risk (about CDS) was so remote that the fees were almost free money». «Just put it on your books and enjoy the money». Tom Savage (President of AIG Financial Products).

<sup>60</sup> ROBERT L. MCDONALD AND ANNA PAULSON, *AIG in Hindsight*, NBER Working Paper No. 21108, 2015.

capital requirement for the commitments it was taking. American International Group was not reserving enough funds for the CDS that it was writing; and consequently, when the house prices started to decrease and AIG had to redeem the commitment and pay the investors it did not have enough funds to insure the coverage. Indeed, after the explosion of the crisis, without those insurances, the bank's activities became much more risky than what the banks had assumed and, therefore, they found out that they did not have enough funds to cover the losses. At the same time, the entire economic system realized that in case of failure of American International Group both the credit default swap and the life insurances of thousands of American citizen would have disappeared.

In order to prevent any issue, the United States government rescued the company through an 85 billion Dollars loan. Please note that, just by the end of 2009, the government had already given to American International Group more than 150 million Dollars that the insurance used to pay both, the families who had taken out life insurances and the banks and investors who had bought credit default swaps.

In the end, American International Group ignored the basic core principles of finance and insurance; indeed the fact that AIG believed that it could underwrite billions of bond insurance coverage without ever have to pay on losses is truly mystifying when it comes from one of the colossus in the insurance world. Another factor that should be taken into account is that American International Group was also performing activities that were not connected with the insurance field. In particular, American International Group was speculating by issuing large amounts of credit default swaps connected to mortgage backed securities and, doing this, the company was not taking into account the risks connected to these further activities<sup>61</sup>. In this context, please note that, the risks connected to the products sold by insurance companies are completely different

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<sup>61</sup> CAO ZHILI, *Contrasting Systemic Risk in Banking and Insurance*, European Institute of Financial Regulation, 2015, 3.

from the banks' ones<sup>62</sup>. In fact, the traditional insurance business has much fewer liquidity problems.

With regard to insurance companies, liquidity risk is not an issue, indeed policy holders are not enabled to make cash demands at will. In fact, the insurance premium is received by the policy holder (or by the person designated) just in case of certain unpredictable events (such as the death of the policy holder, a natural disaster, or any other event provided for in the contract)<sup>63</sup>.

On the other hand, the risks connected to banks' activities are strictly related to liquidity risk and come from the combination between profitable but illiquid projects and the instability of the fractional reserve system<sup>64</sup>. In this context, banks, in order to expand their economy, need to collect money from depositors and to use it to invest in other activities (*i.e.* financial instruments) and to give loans to other people. This system creates instability and fragility in the bank's funding system, indeed it exposes the bank to run risk<sup>65</sup>, namely the risk that, in case of financial crises, all the depositors expecting that all the other market participants may withdraw their funds simultaneously, withdraw all the money on their bank accounts. When depositors withdraw their funds the more stable part of bank funding deteriorates rapidly, leading to new liquidity problems and insolvencies (creating a "domino effect"). In this scenario, if a large number of depositors remove their funds from their bank accounts, banks might become insolvent and go bankrupt, in fact, *«a large withdrawal by other lenders might force a bank to liquidate some of its assets at a loss or for an amount strictly lower than the value of the assets that the bank can offer as collateral»*<sup>66</sup>. In this context, the relationship between liquidity and asset prices amplifies the fragility of banks. In fact, if several banks

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<sup>62</sup> CHRISTIAN THIMANN, *How insurers differ from banks: Implications for systemic regulation*, VOX – CEPR Policy portal, 17 October 2014.

<sup>63</sup> CAO ZHILI, (nt. 61), 3.

<sup>64</sup> RICHARD APOSTOLIC, CHRISTOPHER DONOHUE and PETER WENT, *Foundations of banking risk, an overview of banking, banking risks and risk-based banking regulation*, 17 August 2009, 81.

<sup>65</sup> ROE MARK J., *The Derivatives Market's Payment Priorities as Financial Crisis Accelerator*. Stanford Law Review, Vol. 63, Issue<sup>3</sup>, March 6, 2011; ECGI - Law Working Paper No. 153/2010; Harvard Public Law Working Paper No. 10 - 17, 564. Available at SSRN: <https://ssrn.com/abstract=1567075>.

<sup>66</sup> CAO ZHILI, (nt. 61), 3.

are required to sell assets in order to cover their funding problems simultaneously, the prices of those assets decrease and banks are forced to sell more assets to cover their losses. In such circumstances, a liquidity shortage may lead the initially solvent bank to eventually become insolvent and, thanks to the network which characterises the financial system, may eventually cause a financial crisis.

In past situations of financial crisis, especially the great depression and the great financial crisis, the impact of failing banks on the economy as a whole became clear. Insolvency or liquidity problems of specific banks can spread within days to the whole financial system and, in the extreme case this may lead to the meltdown of the whole financial system.

In light of the above, the main liquidity issue in the field of insurance companies appears when insurers undertake activities outside the scope of their regulatory framework, as American International Group did at the time of the financial crisis<sup>67</sup>.

### 2.3. *The too-big-to-fail behaviour*

In an industry dependent on the trust of investors, everyone thought that banks were too strong to fail and that in the remote case something wrong happened government would have save them. In fact, it is notable that *«when banks falter, as they did in 2007 and 2008, governments feel obliged to come to their rescue since, without them, the economy could not function<sup>68</sup>»*. This belief was so strong that even the most powerful and literate citizens (the ones that were leading the economy of the country) started to support this claim<sup>69</sup>.

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<sup>67</sup> CAO ZHILI, (nt. 61), 5.

<sup>68</sup> PHILIP COGGAN (nt. 5), 32:

<sup>69</sup> ANDREW ROSS SORKIN (nt. 9), 2: *«Like most of the people on Wall-Street - including Richard S. Fuld Jr., Lehman's CEO... many of those listening to the call assumed that the government would intervene and prevent its failure»*.

The idea was that specific businesses, such as the biggest banks, were so vital to the US economy that to avoid a crisis, protect creditors against losses and enable managers to retain their wages and bonuses, the government would have provided bailouts. This concept was so widespread even because everybody saw the US government disbursed 700 billion Dollars to save companies, such as American International Group when it was on the verge of financial failure<sup>70</sup>.

The fact that banks were convinced that in case of default the government would have saved them led to the development of the moral hazard phenomenon<sup>71</sup>. This behaviour stimulated banks to make riskier investments - since the blame and the pain were spread - and led to the individualization of gains and socialization of losses.

It is common belief that the government of the United States decided to not rescue Lehman Brothers precisely with the aim of interrupting that behaviour, making an example and sending a message to all the other banks. In other words, the failure of Lehman exposed all the others banks and financial institutions to the fact that *«with excess leveraging, no institution is too big to fail»*<sup>72</sup>.

On September 14, 2008, Lehman Brothers, the fourth-largest US investment bank at the time of its collapse, went bankrupt<sup>73</sup>. Lehman's bankruptcy, with 639 billion Dollars in assets and 619 billion Dollars in debt, was the largest in history. This collapse greatly intensified the 2008 crisis and made the largest number of victims of the US great financial crisis. In fact, *«when*

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<sup>70</sup> ANDREW ROSS SORKIN (nt. 9), 12. As Richard S. Fuld Jr., the final Chairman and Chief executive of Lehman Brothers declared right after he received notices regarding the share value that morning. *«But they had lived through crises before. They'd survive, he told himself. They always did»*. Richard S. Fuld Jr. (Chairman and Chief executive of Lehman Brothers).

<sup>71</sup> Moral hazard is a phenomenon which occurs when bankers are not adequately incentivised to prevent hazards because they are protected from the consequences of their actions. ANGINER DENIZ and DEMIRGUC-KUNT ASLI, *Bank Runs and Moral Hazard: A Review of Deposit Insurance*, Policy Research Working Paper Series 8589, The World Bank., April 2013, 8.

<sup>72</sup> SHAIKH, SALMAN AHMED, *Lessons from the Great Recession: Need for a New Paradigm* (February 1, 2012). Journal of Economics & International Finance, Vol. 4, No. 6, pp. 131–136, March 2012.

<sup>73</sup> PAPANIKOLAOU, NIKOLAOS I., *The Road Towards the Establishment of the European Banking Union*, 28 February, 2015. Essays in Honour of Professor Panayiotis I. Kanellopoulos 709-723, Sakkoulas Publications, Athens, 2015 Munich Personal RePEc Archive Paper No. 62463, 5. Available at SSRN: <https://ssrn.com/abstract=2573320>.



*Lehman Brothers collapsed it was a major dealer in the OTC derivatives market, including credit default swaps (CDS), and was counterparty to over 900,000 derivative contracts»<sup>74</sup>.*

Interestingly, according to financial data from the balance sheet of Lehman Brothers, two weeks before the company declared bankruptcy, it was neither balance sheet insolvent nor failed the appropriate capital adequacy tests<sup>75</sup>. These two elements are clear signals of the inadequacy of the financial rules applicable during these years and emphasize the need of a new regulation. In this respect, the combination between imprudent government policies (such as the homeowner policy) and the extremely permissive regulatory environment created the perfect background to allow investment banks, such as Lehman, to favour profits over market integrity and incur in extreme risk-taking.

The enormous number of losses caused when Lehman went bankrupt is the reason why its failure is considered as a milestone in the crisis. The collapse of Lehman Brothers caused important effects on the behavior of a lot of people, reducing their market confidence and caused the paralyse of the entire financial system. After its failure all the banks stopped to lend money to both other banks and citizens and the stock market collapsed. Thanks to these two elements, in no time, the financial crisis of the United States turned into a macroeconomic crisis.

As seen in the previous Paragraph insufficient political attention played a key role in promoting the development of the great financial crisis, along with the idea that letting the market free would have been a good idea because the market knew better than anyone else how to regulate certain phenomenon<sup>76</sup>.

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<sup>74</sup> SIDANIUS CHE and WETHERILT ANNE, *Thoughts on Determining Central Clearing Eligibility of OTC Derivatives*, March 26, 2012, 4. Bank of England Financial Stability Paper No. 14. Available at SSRN: <https://ssrn.com/abstract=2028874>.

<sup>75</sup> AMEL-ZADEH, AMIR and MEEKS, *Mark-to-Market and the Financial Crisis*, Geoff, Bank Failure, 1 November, 2011. Available at SSRN: <https://ssrn.com/abstract=1494452>.

<sup>76</sup> The invisible hand theorem by Adam Smith: «Under certain conditions, an unfettered free market economy will be efficient and will move on its own, like if it was an invisible hands». According to this theorem the systems works only when: (i) all the agents are small - indeed one agent can not affect the economic market - and rationales - indeed they all try to maximise their profits; (ii) there are not public goods (a good that if consumed by one individual does not diminish its availability to the other consumers) or externalities (actions of one individual that affect other individuals); (iii) there is perfect information between all the agents, indeed buyers are well informed about prices and quality of the assets that they might buy and (iv)

Regulations, during the 2000's, were driven by an excessive faith in the robustness of market discipline, or self-regulation<sup>77</sup>. At that time regulators were under-qualified, understaffed and generally seen as spoilers where they took a hard line. In fact, one of the main reasons why the market was characterized by the lack of rules was that the government believed that public deregulatory choices were fundamental to promote the growth of the market and of over the counter derivatives.

Please note that economist attributed the US success to «*the openness of its economy, the lack of regulations, the use of share options to motivate executives and employees and a host of other free-market factors*»<sup>78</sup>. Therefore, lax regulation responded to the fear that a tighter regulation would have led to the migration of assets to less intrusive jurisdictions.

The great financial crisis showed to the entire world that despite a lax regulation can be an easy way to attract more capital and investors it can cause disastrous consequences.

Only after the great financial crisis all the governments understood that they needed radical changes through mass action and that active measures were not enough. In fact, as mentioned by the British Academy: «*the events of the past year have delivered a salutary shock. Whether it will turn out to have been a beneficial one will depend on the candour with which we dissect the lessons and apply them in future*»<sup>79</sup>. In other words, what emerges from this analysis is that in order to prevent crisis as the great financial crisis the most efficient way is increase the quality of financial regulation.

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there is perfect competition. The point is that real economy is not characterized by these elements, in fact our economic system is not composed just by small and rationales agents, there are public goods and externalities, there is not perfect information and competition.

<sup>77</sup> JOHN BELLAMY FOSTER and FRED MAGDOFF, *The great financial crisis, causes and consequences*, 22.

<sup>78</sup> PHILIP COGGAN (nt. 5), 9.

<sup>79</sup> British Academy Review, *The Global Financial Crisis - Why didn't anybody notice?*, 14 November, 2009. Available at: <https://www.britac.ac.uk/sites/default/files/03-Besley.pdf>.

### 3. *Why did not anybody noticed – reactions to the GFC*

Before analysing the consequences of the great financial crisis from a regulation point of view, we should focus on another key element, namely if it is true that nobody noticed that something so big was happening in front of their eyes and if so, why. In this regard, of particular interest are the reactions of prominent public figures occurred respectively in England and in the United States of America right after the credit crunch. In particular, the analysis will focus on a letter published on the British Academy website<sup>80</sup> and an article published by The New York Times<sup>81</sup>.

#### 3.1. *Great Britain, the British Academy*

On Wednesday 5 November 2008 Her Majesty Queen Elizabeth visited the London School of Economics - LSE to officially open its New Academic Building, during her visit she putted a thorny question to LSE professors, asking: «*If these things were so large, how come everyone missed them?*»<sup>82</sup>. In order to answer, on 17 June 2009, a group of leading academics, economics journalists, politicians, regulators, and a range of experts from the City met at the British Academy for a round-table discussion and after the meeting the two convenors, Professor Tim Besley<sup>83</sup> and Professor Peter Hennessy<sup>84</sup>, drafted a letter<sup>85</sup> summarising the discussion and sent it to Buckingham Palace on 22 July.

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<sup>80</sup> British Academy Review (nt. 79).

<sup>81</sup> JO BECKER, SHERYL GAY STOLBERG and STEPHEN LABATONDEC, *Bush drive for home ownership fuelled housing bubble*, 21 December, 2008. Available at: <https://www.nytimes.com/2008/12/21/business/worldbusiness/21iht-admin.4.18853088.html>.

<sup>82</sup> As reported on the LSE News and Media website, *Wishful thinking and hubris - why the global financial crisis was not foreseen*, July 27, 2009. Available at: <http://www.lse.ac.uk/website-archive/newsAndMedia/news/archives/2009/07/LettertoQueen2.aspx>.

<sup>83</sup> School Professor in the Department of Economics at LSE; member of the National Infrastructure Commission and President of the Econometric Society.

<sup>84</sup> Eminent historian of government, journalist and Attlee Professor of Contemporary British History at Queen Mary University of London.

<sup>85</sup> British Academy Review (nt. 79).

In the letter the experts focused their attention on the general blindness that affected the system during those years, in particular they underlined the fact that despite *«the many warnings about imbalances in financial markets and in the global economy ... the difficulty was seeing the risk to the system as a whole rather than to any specific financial instrument or loan»*; this belief was based on the fact that *«most were convinced that banks knew what they were doing. They believed that the financial wizards had found new and clever ways of managing risks»*.

Another considerable element is that even if institutions like the Bank of International Settlements (also known as “BIS”) and the Bank of England expressed repeated concerns about the risks that did not seem to be properly reflected *«everyone seemed to be doing their own job properly on its own merit. And according to standard measures of success, they were often doing it well»*. The fact that everything seemed to be working in a proper way is a clear sign of the big need to have a stringent regulation and consequently institutions able to supervise and control their enforcement. In fact, as demonstrated during the round-table discussion, *«the failure was to see how collectively this added up to a series of interconnected imbalances over which no single authority had jurisdiction»*.

The impressive thing is that this feeling of confidence was spread all over the world. In fact as reported in the letter: the crisis *«was principally 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»*.

### 3.2. United States, The New York Times

In the meantime, on December 21st 2008 the New York Times was publishing a bitter and exhaustive article<sup>86</sup> about the interconnection between the Homeownership Policy and the housing bubble, blaming Bush and Clinton for

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<sup>86</sup> JO BECKER, SHERYL GAY STOLBERG and STEPHEN LABATONDEC, (nt. 81).

sustaining the course of action that led to the collapse of the global financial system.

On September 18, while the financial system was teetering on the edge of collapse Bush and his economic team met at the White House for a briefing about the topical events happened on the previous days, such as the belly-up of Lehman Brothers, overwhelmed by toxic mortgages; the acquisition of Merrill Lynch by Bank of America in a hastily arranged sale and the provision of 85 billion Dollars to the failing American International Group. On that extremely serious occasion President Bush paused for a single stunned moment and wondered: *«how, did we get here?»*<sup>87</sup>.

The first considerable answer is really close to the British Academy' one and it was given by Keith Hennessey<sup>88</sup>, who declared that even if he and his colleagues had done the best they could with the information they had at the time, they regretted that the administration had not paid more attention to the dangers of easy lending practices. Once again, the finger of blame points the lack of supervision and the failure to observe the situation in a realistic and loyal way.

The second answer, particularly interesting and thought-provoking, was given by Lawrence Lindsay<sup>89</sup>, who responded there was little impetus to raise alarms about the proliferation of easy credit because it was helping Bush meeting housing goals and *«no one wanted to stop that bubble ... It would have conflicted with the president's own policies»*.

The perspective given by this article is really impressive because, contrary to the first one it considers the great financial crisis the result of political choices In fact according to this point of view the major cause of the crisis had been Housing Policies and hands-off approach to regulation that encouraged lax lending standards.

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<sup>87</sup> JO BECKER, SHERYL GAY STOLBERG and STEPHEN LABATONDEC (nt. 81).

<sup>88</sup> Bush's former Assistant for Economic Policy and Director of the U.S. National Economic Council.

<sup>89</sup> Bush's first chief economic adviser.

#### 4. *Conclusions*

In light of the above, what emerges is that the crisis has been caused by a varied and complex mix of ingredients. In fact, despite the signals nobody was able to see how terrible the situation was and the people or institutions that were able to notice it were taking advantages from the circumstances, therefore they did not have any kind of interest in changing the situation.

The trends of opinion of both the articles focus on the system' blindness: in the first case caused by the inability of people to see the gravity of the situation<sup>90</sup>, and in the second by the desirability of lack of regulation.

What regulators and investors should have learned from this lesson is that in order to prevent such a terrible crisis to happen again it is necessary to implement the regulation and to favour its enforcement through the prevision of stringent supervision.

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<sup>90</sup> JO BECKER, SHERYL GAY STOLBERG and STEPHEN LABATONDEC (nt. 81): As «*the failure was to see how collectively this added up to a series of interconnected imbalances over which no single authority had jurisdiction*».