A Crisis of Government - How The Financial Crisis of 2008 Was Created

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Abstract

En regeringskrise – hvordan finanskrisen i 2008 blev skabt


Den amerikanske regerings boligprogrammer, og dereguleringen af den finansielle sektor, betød at finansielle virksomheder kunne skabe et nyt marked. For eksempel fandt långivere inspiration i de regeringsstøttede realkreditselskaber, Fannie Mae og Freddie Mac, til at udstede risikable lån til lavindkomstgrupper med formål om at videresælge lånene i det sekundære realkreditmarked. Hvor långiverne så en mulighed i at sælge deres lån til Fannie Mae og Freddie Mac, så blandt andet investeringsbanker en mulighed i at opkøbe lånene fra de to for efterfølgende at pakke dem sammen med andre typer lån. Denne process kaldet “securitization” skabte derivater, som investorer kunne handle, forsikre og vædde imod i den såkaldte “shadow bank”-sektor. Det var især derivaterne MBS’er, CDO’er og CDS’er der blev et problem da boligmarkedet vendte.

Rentestigninger med mere i midten af 2000’erne betød at mange lavindkomstfamilier ikke kunne betale deres månedlige ydelse og måtte gå fra hus og hjem. Selvom misligholdelsen af lånene først og fremmest skabte problemer for de familier som måtte forlade deres hjem, spredte problemerne sig hurtigt til de finansielle
virksomheder som havde investeret i derivater der bestod af disse lån. De faldende boligpriser samt de manglende boligydelser betød, at derivaterne faldt i værdi, at investorerne trak sig fra markedet, og at derivatmarkedet frøs. Det illikvide marked betød, at investorer, som ejede disse derivater, ikke kunne afvikle deres beholdninger, og flere af dem blev hurtigt teknisk insolvente, hvilket tvang den amerikanske regering til at gribe ind.


Konsekvensen af regeringens redningspakker i 2008 var, at mange banker fusionerede eller opkøbte hinanden, hvilket resulterede i, at de resterende banker efter krisen var større end tidligere. I 2010 godkendte den amerikanske regering lovforslaget Dodd-Frank Act, i et forsøg på at løse nogle af de problemer som skabte krisen. Et af hovedpunkterne i lovgivningen beskæftigede sig med konceptet too-big-to-fail. Too-big-to-fail var en af årsagerne til at regeringen måtte redde de største banker og er derfor kun blevet mere relevant efter krisen, noget vi vurderer, kan udgøre en væsentlig risiko ved en fremtidig krisen.
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<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AIG</td>
<td>American International Group</td>
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<tr>
<td>AMTPA</td>
<td>Alternative Mortgage Transaction Parity Act</td>
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<td>CDO</td>
<td>Collateralized Debt Obligation</td>
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<td>CDS</td>
<td>Credit Default Swap</td>
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<tr>
<td>CFMA</td>
<td>Commodity Futures Modernization Act</td>
</tr>
<tr>
<td>CFTC</td>
<td>Commodity Futures Trading Commission</td>
</tr>
<tr>
<td>FCIC</td>
<td>Financial Crisis Inquiry Commission</td>
</tr>
<tr>
<td>FCIR</td>
<td>Financial Crisis Inquiry Report</td>
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<tr>
<td>FDIC</td>
<td>Federal Deposit Insurance Corporation</td>
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<tr>
<td>FHC</td>
<td>Financial Holding Company</td>
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<tr>
<td>FHLB</td>
<td>The Federal Home Loan Bank</td>
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<tr>
<td>FOMC</td>
<td>The Federal Open Market Committee</td>
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<tr>
<td>FSB</td>
<td>Financial Stability Board</td>
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<tr>
<td>FSOC</td>
<td>Financial Stability Oversight Council</td>
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<tr>
<td>GSE</td>
<td>Government-Sponsored Enterprise</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>LIBOR</td>
<td>London Interbank Offered Rate</td>
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<tr>
<td>MBS</td>
<td>Mortgage-Backed Security</td>
</tr>
<tr>
<td>MMMF</td>
<td>Money Market Mutual Fund</td>
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<tr>
<td>NRSRO</td>
<td>Nationally Recognized Statistical Rating Organization</td>
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<tr>
<td>OTC</td>
<td>Over-the-Counter</td>
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<tr>
<td>PDCF</td>
<td>Primary Dealer Credit Facility</td>
</tr>
<tr>
<td>SEC</td>
<td>Securities Exchange Commission</td>
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<tr>
<td>TARP</td>
<td>Troubled Asset Relief Program</td>
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“… part of economic security is owning your own home. Part of being a secure America is to encourage homeownership, so somebody can say, ‘This is my home. Welcome to my home.’”

- President George W. Bush, June 17 2002 (Atlanta, Georgia)
Introduction

In 2004, the Securities and Exchange Commission (SEC) made a rule that lowered capital requirements for the five big investment banks, Goldman Sachs, Morgan Stanley, Merrill Lynch, Bear Stearns and Lehman Brothers. The SEC’s decision allowed the five investment banks to increase their ratio of borrowed money leading the investment bank Bear Stearns to finance as little as 3 percent of their investments themselves (Labaton, 2008). When the crisis hit four years later, only two out of the five investment banks survived.

The financial crisis of 2008 unfolded after a long period of growth in the housing market. Following the stock market crash in 2000 and the terrorist attacks on September 11, 2001, the Federal Reserve slashed interest rates which made investors look to the housing market for a safe investment. This as well as government programs aimed at increasing homeownership in the United States enhanced the growth in the housing market. The government programs not only helped increase demand for houses, but also inspired the development of a completely new market for reselling home mortgages in the secondary mortgage market. This new market was developed in the so-called shadow banking industry where financial institutions perform the core function of banking outside the regulated banking system. The shadow banking system created a highly profitable way of processing mortgages and other loans. The ability to resell loans and the profitability of it increased demand for new loans to be sold in the shadow banking system. As a result mortgage originators began to issue riskier mortgages to previously unavailable customers who had no job, no income, and no assets. These high-risk mortgages were highly unstable as the new pool of high-risk homebuyers had no financial attachment to their home. When housing prices stagnated and began to fall in 2007, the risk of these unsustainable loans materialized. Not only for homeowners, but also for the investors who owned the mortgages.

In this thesis we show that the causes of the financial crisis of 2008 are a result of financial deregulation starting in the 1980s combined with government policies aimed at increasing homeownership. We find that financial deregulation from the 1980s and forward beginning when Ronald Reagan was elected president and continuing under the
following administrations, played a significant role in the origins of the crisis. We argue that deregulation together with government programs that pushed for homeownership to all Americans sowed the seed for the financial crisis of 2008. This seed created the foundation that we argue the financial crisis was built on top of. A foundation that created the opportunity for shadow banks to outgrow the traditional banks through the development of new financial innovations such as complex derivatives and swap deals that are all widely accepted as causes of the financial crisis. Furthermore, we argue that lobbying activities from financial institutions since the 1980s have to a great extent influenced the deregulation that occurred and thus the creation of the aforementioned foundation. By influencing policymakers to loosen financial regulation such as the repeal of the Glass-Steagall Act, the financial institutions have played a major role in the political landscape. In addition, lobbying and deregulation significantly increased the size and systemic importance of the financial sector which presented the government with the dilemma of who and who not to bailout during the crisis. We argue that the government bailouts made during the crisis made the too-big-to-fail controversy even more relevant for the future.

When a crisis occurs, it is a logical response to investigate the causes of it in order to prevent the same things from happening again in the future. One of the most popular arguments is that the financial crisis was a result of excessive risk-taking by financial institutions, an argument we agree with, but not what we consider to be the primary cause. In this paper we go a level deeper by looking at the causes of the causes, as we believe something has to have driven financial institutions to take these excessive risks. Taking a historical perspective on the financial crisis by looking at the decades leading up to it, we provide a deeper understanding of how the crisis could happen instead of just accepting the mainstream argument that “Wall Street created the crisis.”
Research Question

The purpose of this thesis is to answer the following research question and four subquestions:

What political measures were taken in the United States after 1980 that contributed to the severity of the financial crisis of 2008?

1. Did financial deregulation and government policies from the 1980s and forward create the foundation for the financial crisis of 2008?
2. How did financial institutions use the deregulation of the economy from the 1980s and forward?
3. What role did lobbyism efforts of financial institutions play before, during and after the crisis?
4. Did the government bailouts in 2008 and the 2010 Dodd-Frank Act solve the problem of too-big-to-fail?

Structure

The structure of the paper is as follows. We start out by presenting the theories relevant for analyzing the background for the 2008 financial crisis. The paper combines the macroeconomic theories of John Maynard Keynes, Friedrich August Hayek, and Milton Friedman with three theories within consumption culture keeping-up-with-the-Joneses, herd behavior, and moral hazard. The actions taken by the Federal Reserve and the U.S. Treasury Department are used throughout the paper, and their roles and structural backgrounds will thus be explained. Serving as an introduction to the subject of how the crisis could occur, a timeline of what happened in 2008 is presented. The timeline gives an overview of the failures of certain financial institutions and the subsequent bailouts they had to receive from the U.S. government. Following the timeline, the main part of the paper starts by presenting how and why the Glass-Steagall Act was created in 1929, before taking a historical perspective on deregulation and government policies since the 1980s. Then, the different causes of the financial crisis and how they almost broke the financial system will follow, by looking at what emerged from
the era of deregulation. Besides analyzing the causes of the crisis, we also look at the role of lobbyism efforts by financial institutions before, during and after the crisis. The last part of the paper discusses the aftermath of the crisis. This is done first of all by looking at the Dodd-Frank Act, a financial reform that was implemented in the wake of the crisis, and finally by looking at the size of the financial institutions after the crisis in relation to the concept of too-big-to-fail. The too-big-to-fail concept is especially important as we consider it to be a potential problem for the next big financial crisis. This issue is discussed in the last part of the paper before we present our conclusion to the whole paper.

**Methodology**

This paper is a study within the social sciences examining the political developments that took place in the United States in the decades leading up to the financial crisis in 2008. The crisis was not caused by a single factor, but a result of multiple factors. When investigating the factors that contributed to the crisis, it is thus important to notice that none of the factors alone could have resulted in the crisis. Our thesis analyzes the elements of the crisis individually and evaluates how they contributed to the collapse in relation to our research question “what political measures were taken in the United States after 1980 that contributed to the severity of the financial crisis of 2008?”. In order to structure our data gathering, we created an outline of the different topics relevant to the thesis. We decided to complete a preliminary data gathering to test whether or not the proposed research question and the outline of the paper could be supported by data. During the first data gathering process, the focus was primarily on finding three to five sources for each subject which resulted in us gathering a large pool of roughly 100 different sources. The initial data gathering not only confirmed that the data and academic sources for our research question existed, but it also helped us establish a general knowledge about the subject. This initial data was based on a mixture of newspaper articles, documentaries, journal articles and academic papers as they mainly
served the purpose of confirming the existence of data. In order to write the paper a far larger pool of data had to be studied before we were able to understand the financial crisis, and mediate the crisis to our audience. During the writing process, we began to gather new sources that consisted of academic papers, books, and publications from government sources and international organizations such as IMF, the Federal Reserve, and the Financial Crisis Inquiry Commission (FCIC). The new sources were compared to the initial data pool, and we selected the ones that we deemed to be of the highest quality as the sources in our thesis. As a result, some of the sources initially gathered have not been cited in the paper. Most of our primary and secondary data are gathered through sources such as Libsearch, Copenhagen Business School’s journal database, Google Scholar, and for the initial data gathering normal Google searches. Furthermore, we also used tertiary sources such as encyclopedias and textbooks for definitions of financial terms as well as historical information.

Through extensive use of primary sources including congressional hearings, speeches, lectures as well as government and annual reports we learned how experts disagreed on potential causes for the financial crisis before it happened. We learned this through speeches from experts, who disagreed that a crisis was imminent (i.e. Alan Greenspan in his speech at the Meetings of the American Economic Association, San Diego, California, January 3, 2004; and Larry Summers’s testimony before the Senate Committee on Agriculture, Nutrition, and Forestry on July 30, 1998); through government reports (i.e. The Financial Crisis Inquiry Report from 2011; the 2011 IMF report “Three's Company: Wall Street, Capitol Hill, and K Street”; and the 2009 Congressional Research Service report “Credit Rating Agencies and Their Regulation”); and through sceptics who tried to warn about the emergence of a crisis (i.e. Brooksley Born’s testimony before the U.S. House of Representatives Committee on Banking and Financial Services on July 24, 1998 and Warren Buffett’s letter to shareholders in the 2002 annual report of Berkshire Hathaway). These primary sources were chosen as we consider them the only realistic method to get as close as possible to the original ideas of important individuals from the financial crisis. We abandoned the idea of gathering primary data by performing interviews as we considered it to be unrealistic that relevant sources would agree to be interviewed for a master’s thesis. We only considered
interviews to be a relevant source of primary data if they were of key individuals relevant to our research question or if they could provide us with information that we could not obtain in other ways. Instead, we decided to focus our energy on the aforementioned chosen primary data sources.

In order to ensure the validity of our thesis, we found it crucial that our sources were reliable. To answer our research questions and evaluate the individual elements of the financial crisis we have analyzed a wide range of quantitative and qualitative sources. Quantitative sources included databases such as house prices and lobbying spending, and qualitative sources included the aforementioned academic papers and journal articles. The secondary sources were mainly academic research papers from business and social science journals such as the Journal of Economic Perspectives and Harvard Law & Policy Review as well as papers from respected research institutions such as the National Bureau of Economic Research. To assess the quality of our sources we looked at peer-reviews and number of citations and to the best of our ability used sources that had been cited multiple times. When the quality of an author was questioned, we performed a brief background check including scholarly background and places of employment to assess whether or not to use the source in question. Furthermore, we also looked at the sources used by our sources as it also gave an idea of the quality of the material. The quality of our primary data sources was not considered to be a problem as we could see either on the document or the video who was speaking. The problem with performing an interview through e-mail would be that if we were lucky enough to receive an answer from for instance Greenspan, we could not be sure that it was actually Greenspan or an assistant who answered the e-mail. This would question the quality of the primary data.

Throughout the paper we applied different theories in order to answer our research questions. A combination of economic theories as well as different theories within consumption culture were used to explain how the crisis emerged. The economic theories of John Maynard Keynes, Friedrich August von Hayek, and Milton Friedman dominated different periods in the U.S. and were used to define what time period our paper should focus on. Their economic theories on how markets function and the role of the government influenced the government's decisions and thus our research aiming to
explain how the government played a role in creating the financial crisis. In addition, consumption culture theories such as keeping-up-with-the-Joneses, herding, and moral hazard, were used in our thesis to show how the housing bubble emerged. Through these theories we explained the behaviors of consumers and financial markets in the years leading up to the financial crisis as well as in the wake of the crisis.

**Delimitations**

The financial crisis of 2008 is a very broad topic that due to its complexity can be analyzed in many different ways. As students interested in the financial crisis, but without a background in finance, the purpose of our thesis is to communicate the financial crisis to an academic audience that could be interested in the financial crisis, yet might not have a financial background. With this academic audience in mind, we have decided to omit certain elements and details to make sure the information presented helps the reader understand the crisis rather than create more confusion. These delimitations have been made to make the thesis clearer as even financial experts had problems understanding all aspects of the financial crisis. One of the ways we seek to help the readers is to limit our thesis to the U.S., despite it being a global crisis that affected the whole world. Furthermore, we limit the main part of the thesis to the time period 1980-2008; however, we do go beyond the defined time period a few times in order to explain certain important subjects. The overall time period is selected based on a shift in economic ideology in the U.S..

The analysis begins with a timeline of the events and bailouts during the crash of the financial markets in 2007-08. The timelines focus is on the collapse of the largest financial institutions and the largest government bailouts in that period. We understand that there were many more failures of financial institutions and that the government issued more bailouts than the ones we mention; however, we chose to omit those in order to focus on the main ones. The financial institutions were chosen based on their size as they all fell under the too-big-to-fail category, and that they due to their size would be more familiar to most readers.
In the section about financial deregulation, we mention different pieces of legislation that affected the financial sector and eventually the crisis in 2008. We realize that there have been numerous other bills that have influenced both the financial markets and the housing market. However, we have chosen only to focus on the laws that solely deal with these issues and the laws we consider had the biggest impact on the crisis in 2008. For the same reason, we have chosen to omit Ginnie Mae as it was Fannie Mae and Freddie Mac that played a significant role in the 2008 crisis.

In the section explaining what we argue is built on top of the period of deregulation we have omitted certain technical elements too. When discussing shadow banking and its influence on the crisis we have decided to focus primarily on the system as a unit and not go into details of what, and how specific companies partake in the shadow banking industry, for instance through the use of Special Purpose Vehicles and Structured Investment Vehicles which are not essential for our purpose. For similar reasons, we have chosen to focus on the most important derivatives in relation to the financial crisis. We are aware that there are a much larger variety of derivative bonds than the ones we mention in the thesis, yet bonds such as asset-backed securities, synthetic CDOs and CDO squared are deliberately omitted as they again are not necessary for our research question, and including them would create more confusion than clarity.

Finally, the Dodd-Frank Act is a very comprehensive piece of legislation spanning over 2,300 pages. For simplicity reasons we have only described the most important parts of it based on the issues we have listed as part of the crisis. We consider a detailed analysis of the Dodd-Frank Act to be more suitable for a completely separate research paper that goes beyond what we seek to answer in this thesis.
Theory

In order to understand the financial crisis, a number of theories can be used, and depending on what factors are being analyzed different theories can be applied. As our paper mainly focuses on the political side of the crisis, we argue that in order to understand why the U.S. government acted the way it did both prior, during and after the crisis, it is relevant to use the economic theories that were dominant in the different time periods. We choose to use the three dominant economic theories of John Maynard Keynes, Friedrich August Hayek, and Milton Friedman. Each of these three economists’ view on how markets function and what the role of the government should be, have dominated different periods in the U.S. and thus the government's decisions. We use these theories to define what time period our paper will focus on.

To understand how the housing bubble emerged, we use consumption culture to explain behaviors such as keeping-up-with-the-Joneses, herding, and moral hazard. These theories will be used to explain the behaviors of consumers as well as financial markets in the years leading up to the financial crisis as well as in the wake of the crisis. Where keeping-up-with-the-Joneses primarily is used to explain the behavior of households, moral hazard will be used to explain the behavior of financial markets and herding will be used for both.

Macroeconomic theory

In this section we present a summary of the three economic theories of John Maynard Keynes, Friedrich August Hayek, and Milton Friedman. Keynesian economics became the dominant ideology in the U.S. during and after the Great Depression; however, economic events in the late 1970s and early 1980s marked a shift towards free market ideologies. The shift towards the ideologies of the free market advocates Hayek and Friedman, initiated a period of deregulation in the U.S. Our argument that deregulation and political measures taken in the U.S. after the 1980s were a major contributor to the financial crisis is created based on this significant shift in ideologies. The majority of our analysis will thus focus on the 1980s and forward; however, we will also touch upon the Glass-Steagall Act implemented after the stock market crash of 1929.
and during the Great Depression. The Glass-Steagall Act was an important piece of legislation for the financial market, and also a significant example of Keynesian economic ideas removed during the Hayek and Friedman period.

We start out by explaining the emergence of Keynesian macroeconomic theory and what the theory entails. The focus will be on the overall ideology while also mentioning the elements that are relevant for the focus of our paper. The section following Keynes is a combined section explaining first Hayek and then Friedman. These two are combined into one section as the elements of their theories we use in many areas are similar. Throughout the paper they will be applied as both one joint ideology due to their similar opinion of the role of government in the economy, and individually. However, as Friedman, who was influenced by Hayek, is argued to have been more influential on the U.S. government he will be the one mentioned when we discuss the influence of economic theories.

**Keynesian macroeconomic theory**

Keynesianism is named after the British economist John Maynard Keynes (1883-1946). It grew out of the economic turmoil in the 1920s and early 1930s that resulted in the Great Depression. The decades leading up to the Great Depression had been characterized by a laissez-faire or free market orthodoxy approach to economic policy which let the forces of supply and demand solve all problems (Krugman, 2007). However, classical liberal theory failed to explain the Great Depression, nor offer solutions to it, which paved the way for new and different economic approaches.

One of these new approaches was put forward by John Maynard Keynes who was a liberal economist – as Paul Krugman (2007) puts it: “he came to save capitalism, not to bury it.” However, Keynes had a new way to look at financial crises and how to deal with them. Keynes rejected the classical liberal theory that free markets automatically would ensure full employment through the notion that “everyone who wanted a job would have one as long as workers were flexible in their wage demands” (Jahan, Mahmud, Papageorgiou, 2014). Keynes’s theory was that the most important driving force in an
economy is the aggregate demand which is the sum of spending by households, businesses, and government. Furthermore, Keynes was a proponent of government intervention in order to achieve full employment and price stability (Jahan et al., 2014).

Keynes provides three main principles to explain how the economy works. The first principle is that “aggregate demand is influenced by many economic decisions — public and private” (Jahan et al.). This means that decisions made in the private sector can affect economic results, for example, an economic downturn can lead to layoffs in the private sector, which leads to less consumer spending. This, according to Keynesian economics, requires government intervention such as a stimulus package (Jahan et al.). The second principle is that “prices, and especially wages respond slowly to changes in supply and demand,” which results in recurring labor shortages and surpluses (Jahan et al.). For example, in a time of crisis demand decreases rapidly ultimately resulting in layoffs which creates a surplus of labor. The third principle is that “Changes in aggregate demand, whether anticipated or unanticipated, have their greatest short-run effect on real output and employment, not on prices” (Jahan et al.). Because prices according to Keynes are considered to react slowly to market changes, an increase in for example government spending, while all other factors remain the same, will increase total output. The amount the total output will increase depends on the size of a multiplier effect which is based on factors such as households’ willingness to spend the extra income, as the money creates a value adding effect throughout the system.

Keynesian economists believe in so-called countercyclical fiscal policies in order to reduce the impact of the business cycle. This means that in periods of economic downturn governments should increase spending in for instance labor-intensive infrastructure in order to boost employment such as the construction of the Hoover Dam during the Great Depression (Holland, 2013). In periods of high economic growth, on the other hand, governments should decrease spending and/or raise taxes in order to calm the growth and to prevent high inflation. All of this to minimize the extreme fluctuations in the business cycle that Keynesians see as one of the biggest economic problems (Jahan et al.). As opposed to classical economic thought, Keynes did not believe that governments should wait for the market to fix things in the long run. Rather, he believed that governments should solve the problems in the short run (Jahan et al.).
One of the first examples of Keynesianism as a government policy was seen in the 1930s when U.S. President Franklin D. Roosevelt implemented the New Deal as a response to the Great Depression. However, it did not become widespread in the rest of the developed world until the post-World War II era, when Keynesian economics became the dominant policy of governments. It remained the dominating policy until the late 1970s when many developed countries including the United States experienced low economic growth, high unemployment and high inflation – a phenomenon called stagflation. Keynesian economics failed to explain this development, which provided a way for neo-liberal economists, who were in opposition to Keynes, to be heard. Neo-liberalism is what dominated government policies from the 1980s up until the financial crisis in 2008, after which Keynesian economics in some way has had a revival. This is especially true when it comes to dealing with recessions as many governments have introduced spending packages to stimulate the economy (Jahan et al.).

Hayek’s and Friedman’s macroeconomic theories

Friedrich August Hayek (1899-1992), an Austrian neo-liberalist economist, is by many conventional economists viewed as a free market extremist (The Economist, 2004). Hayek received a reputation for being a radical economist because he argued for a completely free market without any government regulation. Hayek became increasingly more radical with age, and in the 1970s he started suggesting that multiple currencies could compete within one economy, making banking completely free, as each bank could create its own currency.

Most of Hayek’s early work during the 1920s and 1930s were within the area of business cycles, capital theory, and monetary policy (Library of Economics and Liberty, n.d.). Hayek believed that the three were interconnected, and believed that the best way for economies to function would be without government regulations. Hayek, who was inspired by the British liberal economist Adam Smith’s view of how markets self-regulated, saw the market as a complex system that would be too complex for any government to understand. He argued that because markets are controlled by people’s
actions, it would evolve slowly as a result of those actions in market cycles. Even if the economy would face a period of market failure and a downturn the government should not intervene, as any attempt potentially could make the downturn worse. He argued that during a downturn the market over time would heal itself by removing the unsustainable elements, sort of like an economic Darwinism where only the fittest companies survive.

Hayek further argued that if central banks lowered interest rates to an artificial level to promote investments, it would result in unsustainable investments by businesses because they would not be aware that the interest rate was artificially created. The result would be artificially high levels of investments that eventually would result in a bust (Library of Economics and Liberty, n.d.). Hayek considered the only way to avoid busts would be to avoid the booms that created them. However, if the busts happened it would be necessary in order for the economy to stabilize and heal itself (Library of Economics and Liberty, n.d.).

Even though Hayek had published his research since the 1920s, he stood in the shadow of Keynes as the world governments had a strong belief that they could control the economy. The 1970s, however, marked an important shift for Hayek. In 1974 Hayek was awarded the Nobel Prize in economics and the election of Margaret Thatcher as Prime Minister of Britain in 1979 further strengthened Hayek’s influence on the world economy. The troubled economies of the 1970s looked for a way out of the recession and Thatcher, and other conservative leaders started to look at Hayek’s idea of a free market. The 1980s and 1990s marked a period of deregulation not only in Britain but also in the U.S. where Thatcher had a strong ally in U.S. President Ronald Reagan who took office in 1981 (The White House, n.d.). Where Hayek inspired Thatcher, the American economist Milton Friedman served as inspiration for Reagan.

In a 2004 interview with the Wall Street Journal, Milton Friedman was asked who he considered to be the most important economist besides himself. Friedman answered Keynes (Ip & Whitehouse, 2007). His answer might come as a surprise to some as Friedman, a classical liberal, spent most of his career challenging Keynes economic thinking. Friedman agreed with the Austrian school of economics and Hayek when it came to government interventions in the marketplace (Ip & Whitehouse, 2007). Friedman said “The basic long-run objectives, shared, I am sure by most economist are political
freedom, economic efficiency and substantial equality of economic power… I believe… that all three objectives can best be realized by relying, as far as possible, on a market mechanism within a ‘competitive order’ to organize the utilization of economic resources.” (Ashbee, 2010).

However, where Hayek wanted the markets completely free from government Friedman argued that the government and central banks played an important role in controlling the money supply. He argued that inflation and deflation were directly tied to the money supply and that when the Fed failed to control the money supply the market suffered. Friedman’s view of a free market was thus more feasible for governments as it allowed them to use monetary policy to try to control the economy while still arguing for a free market. Friedman used this theory called monetarism theory, to criticize the Fed’s role in the Great Depression and during the high inflation periods of the 1970s. He argued that these two crises would not have been as severe if the Fed had managed the money supply better (Ashbee, 2010). Despite Friedman’s laissez-faire approach to the economy, he also had policies that were not laissez-faire. Among other he argued for a negative income tax, in an attempt to fight poverty.

Friedman’s theories were for a long period of time not the controlling ideas of the U.S. government that tended to follow the Keynesian ideologies up until the late 1970s. However, when the U.S. was battling high inflation in the 1970s Friedman’s theories of monetarism started to become more and more influential. In the late 1970s when Paul Volcker was assigned as Chairman of the Fed, Friedman’s monetarism theory was briefly used to battle inflation. In the years following Friedman’s laissez-faire and free market approach became more and more influential. The election of Ronald Reagan as President of the United States further boosted the influence of Friedman’s ideology, just as the appointment of Alan Greenspan as Chairman of the Fed did. Both of them were very skeptical towards big government and wanted the market to be as free as possible.

The shift from Keynesian economic thinking to Hayek and Friedman lasted until the financial crisis of 2008 when the U.S. government rushed to save the financial market from a total collapse through different types of government interventions more in line with Keynesian economic theory. The 2008 crisis marked a period where the free market
was heavily criticized for being responsible for the crisis. However, Hayek’s ideology of a completely free market without government intervention can perhaps come out with new energy, as the market was never really free. Prior to the financial crisis, the leaders of the world had believed in a free market and that by controlling the money supply they could step in and change things in the market if things went wrong. This view on markets is more in the line of what Friedman believed in, however, followers of Hayek would consider this view to be arrogant because of the complexity of the markets and that politicians are unable to fully understand these complexities. They would argue that the current financial crisis was a result of this kind of thinking, and the fact that markets were never truly free (Flanders, 2012).

Consumption culture

After describing the macroeconomic theories used to analyze the political side of the financial crisis, we present a brief summary of the three consumption culture theories, keeping-up-with-the-Joneses, herd behavior and moral hazard. We use these theories to analyze the creation of the housing bubble, with a focus on both consumers such as households and on commercial consumers such as financial institutions. We start by explaining the theory of keeping-up-with-the-Joneses which mainly focuses on households explaining how Americans compete with each other through excessive consumption. Next, we explain the concept of herd behavior and how it makes people follow the herd despite their own instincts telling them to do otherwise. Finally, we explain the theory of moral hazard, originally an insurance industry term used to explain how people take more risks if they do not hold the cost associated with the risk.

Keeping-up-with-the-Joneses

Keeping-up-with-the-Joneses is a term within consumption culture used to explain how humans tend to compare themselves to other humans. According to the term, people will always strive to be better or to have better things than the people they compare themselves to. Sociology professor Juliet Schor (1999), argues that the term has
become more relevant in the last couple of decades as many Americans have begun to compare themselves to people from higher income levels. This has resulted in Americans purchasing more luxurious things than their neighbors - as Schor puts it: “Luxury, rather than mere comfort, is a widespread aspiration” (Schor, 1999). Since the late 1990s trophy homes and other luxurious goods have become a popular way to show your personal success.

The need to keep up has become an integral part of American consumer culture. Schor (1999) calls this competitive consumption, and it is the idea that spending is driven by a competitive or comparative process where people try to keep up with the norms of the social group with which they identify (Schor, 1999). This social group has changed over the years. In the middle of the 20th century, it was more common to compare oneself with neighborhood households of similar means. Schor argues that today people are more likely to make the rich and upper middle class a point of reference for themselves. One of the reasons for this shift is that married women started to enter the workforce which meant they spent less time at home (in the neighborhood). At work, they were exposed to a more economically diverse group of people which made the workplace a more important point of reference (Schor, 1999). Additionally, the growing power of media and advertising has influenced people’s perception of what other people have, and what they need to buy in order to be “in” (Schor, 1999). The fact that individuals compete with people from a higher social class is supported by economist Thomas Palley, who finds that lower income households spend proportionately more of their income than higher income households (Palley, 2008). Another reason that consumption culture is so particularly widespread in America is because American society has never been especially class-based where it matters what family you are born into. This means that purchasing luxurious and expensive products is one of the only ways to proclaim your status in society (Singh, 2002). Many people see not-keeping-up-with-the-Joneses as signifying socio-economic or cultural inferiority and psychologists have said that the concept has contributed to compulsive spending disorders as well as contributed to personal bankruptcies as a result of credit abuse (Martin & Schrum, 2008).
The theory of keeping-up-with-the-Joneses can be used to explain what drove consumers to purchase houses beyond their means. The increasing household debt in the U.S. since the 1980s can be argued to have created the precursor for Americans’ willingness to acquire higher levels of debt. Americans’ familiarity with high levels of debt drove them to buy homes far beyond their means, which is one example of what this theory will be used to explain.

**Herd behavior**

Herd behavior is a theory evolved from animals. Some animals’ natural instinct causes them to cluster together to protect themselves from predators as it is the animal’s relative position compared to the other animals that makes it safe. It is thus safer to stay with the herd than it is to leave the herd. Humans share this instinct with animals and herd behavior in humans can thus make it seem more comfortable for humans to base their decisions on what others have chosen. Choosing not to follow the herd’s decision can thus be perceived as putting yourself in danger (Oswald, 2011).

Herd behavior is when a person makes a decision based on what everyone else is doing, despite the person’s instincts preferring to do the opposite. Herding thus undermines personal information in a decision-making process and limits the ability to make independent decisions. Herd behavior is very common in everyday life. For example, given a choice of two more or less identical restaurants, most people will choose the one that has the most people in it, as it is the most popular one, and thus probably the best restaurant (Banerjee, 1992). Decisions are thus taken thinking that others have more information than oneself making them able to make a more qualified decision. This, in turn, creates a fear of missing out on something good if one does not make the same decision as the herd. Herd behavior is also based on the comfort of being in a group which causes people to make decisions based on what the group has chosen in fear of being excluded from the group.

It is however not only in everyday decisions that herd behavior exists. The mechanism is also present in financial markets where investors and fund managers tend to follow the herd without sufficient information, which causes them to jump on the
bandwagon of popular assets and escape immediately at the smallest sign of trouble. This has been named as a cause for increasing volatility in financial markets and for destabilizing them (Bikhchandani & Sharma, 2001), something that is also explained in Keynesian macroeconomic theory. Keynes explains the value of assets as a result of herd behavior in that investors are driven by what other investors think an asset is worth. He states that investors ignore the fundamental value of an investment and instead try to predict what the market will do (The Economics Network, n.d.).

Bikhchandani and Sharma (2001) explain herd behavior in investments such that an investor is influenced by other investors’ opinion when investing. Herding happens when an investor who has made up his mind about investing in a specific asset, changes his opinion as he becomes aware of others’ decision not to invest in the same asset, thus questioning his original decision. In the same way, herding is also present when others are making a decision to invest in an asset, influencing one’s decision to also invest, despite originally choosing not to make that investment (Bikhchandani & Sharma, 2001).

Herd behavior is used to explain how American consumers were driven to ride the wave during the housing boom. Americans could see housing prices increase for more than a decade creating a herd of buyers influencing other buyers to join the herd. It was not only American households that were influenced by herd behavior, but also financial firms felt compelled to follow the masses. Herd behavior can thus be used to explain how and why masses influence each other.

Moral Hazard

Moral hazard, a theory created by the insurance industry, can be defined as “any situation in which one person makes the decision about how much risk to take, while someone else bears the cost if things go badly” (Krugman, 2009b). Moral hazard thus allows someone to increase their risk without increasing their cost associated with the risk, much like how car insurance can change a driver’s style of driving. If a person has insurance on his car, it will increase the incentive for risky driving as he knows that the cost in the event of an accident will be covered by the insurance. Contrary, if a person does not have insurance on his car he will have an increased incentive to avoid situations
that can result in accidents as he would be responsible for the entire expense (Hülsmann, 2006).

The problem of moral hazard is created through asymmetric information, which happens when two individuals engage in a situation where they have different sets of information. This, for instance, happens when someone brings their car to the mechanic for maintenance. The mechanic who is specialized in repairing cars has a higher level of information in the form of knowledge than the customer and can use this knowledge to take advantage of the customer. This is an example of moral hazard where one party, in this case the mechanic, is responsible for the interest of the client to have his car fixed, but at the same time has an incentive to put his own interest first in order to earn more money on the repairs (Dowd, 2009). Moral hazard thus happens as a result of covert actions. The mechanic hides the information about what repairs the client's car actually needs and thus affect the outcome of the agreement to his advantage.

Moral hazard is often mentioned in connection with the financial crisis, and can be used to explain how financial markets acted during the crisis. The excessive risk taking and concepts such as too-big-to-fail, are both examples from the financial crisis that moral hazard can be connected to. Using moral hazard theory, it is thus possible to present an argument for why financial firms were willing to take such large risk. For example, one of the elements of moral hazard states “the incentive of a person A to use more resources than he otherwise would have used, because he knows, or believes he knows, that someone else B will provide some or all of these resources” (Hülsmann, 2006). This example can be directly tied to the financial institutions that were deemed too-big-to-fail as they believed to know that they would be bailed out by the government if they went bankrupt which caused them to increase their risk in the pursuit of larger profits.

**Structural background of the Federal Reserve and the US Treasury Department**

Before going in depth with the analysis of the financial crisis of 2008, it is important to understand the structure and role of the government actors that oversee the economy. In 2008 the economy and the financial sector, in particular, were bailed out by
the Federal Reserve and the Treasury Department and this section will thus seek to explain who the government institutions that saved these companies were. To do so, a brief overview of the structure of the Fed and the Treasury, as well as the tools they can use to steer the economy, will be given. These concepts are explained as they will be applied throughout the paper, and it is thus necessary to understand these concepts to understand the two institutions’ actions during the crisis. Due to the complexity of its nature and its many roles in the economy both during the crisis, and the years leading up to the crisis, the Fed is explained in greater detail than the Treasury.

**The Federal Reserve**

In 1913 President Woodrow Wilson signed the Federal Reserve Act into action, creating the Federal Reserve (Fed) the U.S. central bank. Before the creation of the Fed, the U.S. experienced several financial crises. At the time, the banking system was very fragile and unstable, and the faith in the market was very low. When financial crises hit it would shake the little faith there was in the market resulting in panics and runs on banks (McBride & Sergie, 2015). These bank runs posed a threat, as banks could not meet the increased demand for cash during these times causing them to fail (St. Louis Fed, n.d.). The creation of the Fed ensured that the U.S. had a safer and more stable financial system for the future.

Despite the name the Fed is actually not part of the federal government (St. Louis Fed, n.d.), but serves as an independent within the government, meaning it is shielded from political pressure and interferences from other branches of the federal government. The Fed consists of a two-part system, with its central authority in Washington DC known as the Board of Governors. The Board of Governors, is an independent government agency, and consists of seven governors, who are appointed by the president of the U.S., and approved by Congress. The Governors serve 14-year terms, and one governor’s term expires every two years. This structure not only protects the Board from political pressure and ensures stability but also prevents a single president from filling the Board of Governors with Governors who favor his/her policies (St. Louis Fed, n.d.). The
Chair and Vice Chairman of the board are selected among the seven members by the President and approved by Congress to serve 4-year terms (Board of Governors of the Fed, 2014). Even though the Fed’s policies do not have to be approved by the President or Congress, the Chairman of the Fed have to update Congress twice a year on the monetary policies, and can be called into hearings regarding other issues (St. Louis Fed, n.d.).

The decentralized part of the Fed consists of 12 regional Federal Reserve banks located around the country (Duncan & Goddard, 2009). All 12 reserve banks are non-government organizations that are set up like private corporations and work independently within their region, under the supervision of the Board of Governors (San Francisco Fed, n.d.b). The Reserve Banks conduct the daily activities at a regional level for the central bank while providing services to the U.S. Treasury Department, banks, and the public. An important job for the reserve banks is to bring knowledge about their region’s economy to national meetings and to evaluate if events are imminent that will have a big impact on the local economy (St. Louis Fed, n.d.).

The Federal Open Market Committee (FOMC) is the Fed’s monetary policymaking branch (San Francisco Fed, n.d.a). The FOMC consist of permanent voting members and members who serve on a rotating basis. The permanent members are the seven Board of Governors and the president of the Federal Reserve Bank of New York which is the Reserve bank directly involved in carrying out monetary policies (San Francisco Fed, n.d.a). The remaining Presidents of the Reserve Banks serve as voting members in groups of four and rotate on a yearly basis. The Reserve Banks’ presidents that do not have voting rights still participate in the policy discussions. The FOMC meets eight times a year to discuss and analyze regional, national and international economic and financial conditions. At the end of the meeting, the monetary policy is put up for a vote, and a statement is released with its policy actions and assessment of the economy (San Francisco Fed, n.d.a).

The role of the Fed has evolved over time. The Fed received more power when the Banking Act of 1933, commonly known as Glass-Steagall Act, was implemented, just as financial reforms through the 1990s and during the 2008 crisis, such as the implementation of the Dodd-Frank Act, have changed the role of the Fed. However, the
The primary function of the Fed still is to “establish a monetary policy which will enhance confidence and trust, encourage economic stability, reduce or increase inflation as needed and limit unemployment by stimulating the market” (Duncan & Goddard, 2009) In other words, to make sure that as many people as possible have jobs and that prices (inflation) are kept as stable as possible so that the U.S. can maximize its output while improving its standards of living. To achieve these goals, the Fed controls the money supply through monetary policy, and can change the interest rate by regulating the amount of money in circulation.

The Fed has a number of tools it can use to regulate the U.S. economy. When the Fed changes the money supply to either increase or decrease the interest rate, it is called monetary policy. During good economic times, the Fed tends to keep interest rates high, in order to slow down the economy and prevent the economy from growing too fast risking a bubble forming. During bad times, the Fed tends to lower the interest rate by increasing the money supply. The increase makes it cheaper to borrow money and more attractive for businesses to loan money and invest in their businesses thus boosting the economy ultimately making the economy grow and lowering the unemployment rates. When the Fed wants to change the money supply it can regulate one of three tools; reserve requirements, the Discount Rate, or open market operations.

The Fed can change the money supply and interest rates by changing the reserve requirement of deposits that commercial banks are required to maintain either in their own bank or with one of the regional Feds around the country (St. Louis Fed, n.d.). If the reserve requirement set by the Fed is 10% (the typical level) commercial banks will be required to keep 10% of all deposits in reserve and can thus only lend out the remaining 90% (Investopedia, n.d.b). If the Fed, for example, decides to change the reserve requirement to 20%, commercial banks will only be able to lend out 80% of their deposits, and the amount of money in circulation will decrease.

The Discount Rate is the interest rate that banks pay when the lend money directly from the Fed’s reserve banks. Banks typically lend from each other, however, during times of crises with low liquidity, banks’ reserves can fall below the legal reserve requirement set by the Fed. In these cases, the Fed serve as the banker’s bank as the
banks can loan directly from the Fed at the Discount Rate, in order to fulfill the Fed’s Reserve requirements. This function is known as lender of last resort and helps create stability in the financial system and to reduce the severity of economic downturns that all economies experience. Changing the Discount Rate affects the other interest rates as the Discount Rate tends to be the lower than the Federal Funds Rate banks use when the lend money to each other. If the Fed changes the Discount Rate, the Federal Funds Rate will thus typically follow as it is determined by the open market (Investopedia, n.d.b).

The last tool the Fed can use and the tool they use the most is open market operations. Open market operations refer to when the Fed buys or sells government securities in the open market thus changing the amount of money in circulation and the interest rate. If the Fed wants to change the interest rate, it will buy or sell enough government securities to cause the interest rate to settle at the target price set by the FOMC (San Francisco Fed, n.d.a). This will, in turn, influence the Federal Funds Rate, the interest rate the Fed directly controls through the money supply, that banks use when they lend money to each other, as the price of money changes depending on the amount in circulation.

When the Fed wants to lower the interest rate, it buys Treasury bonds thus creating new money that goes into circulation and increases the money supply (Waring, 2015). When this new money enters the system, it creates an effect called the multiplier effect. The multiplier effect deals with how the money creates value throughout the system, and the maximum effect can be calculated which allows the Fed to know the potential impact on the financial markets.

The Fed is at the top of the banking pyramid, and the market and investors react to the slightest rumors of changes in monetary policy. President James Garfield said, “He who controls the money supply of a nation controls the nation” (Kroll, 2012). It is thus easy to understand why the Chair of the Federal Reserve is one of the most powerful positions in Washington (McBride & Sergie, 2015). During the financial crisis, the Chairman of the Federal Reserve was Ben Bernanke, who served from 2006-2014 (Federal Reserve History, n.d.). Bernanke spent most of his academic career studying the Great Depression as he believed the best way to understand economics was to study the biggest crisis to hit the U.S. economy (Ip, 2005). Bernanke’s knowledge of the Great
Depression has been praised by several scholars such as Paul Krugman, who has argued that no one was as prepared for the crisis as Bernanke (Krugman, 2008). At the time of the crisis, the Chairman of the New York Federal Reserve was Timothy Geithner, who was a lifelong public servant, having worked previously in the Treasury Department and at the International Monetary Fund (IMF). As Chairman of the New York Fed, Geithner played an important role during the crisis working closely with Bernanke and Treasury Secretary Henry Paulson. Paulson spent most of his career at Goldman Sachs and eventually served as the company’s CEO from 1999 to 2006 when he was appointed as Secretary of the Treasury by President George W. Bush.

**The Department of the Treasury**

The Department of the Treasury was created in 1789 and was one of the original departments of the United States government. It is thus part of the executive branch of government. The first Secretary of the Treasury was Alexander Hamilton, one of the Founding Fathers of the United States. The main goal of the Treasury is to promote financial and economic stability as well as ensuring the financial security of the country. Originally, the Treasury Department had many duties and functions, but over the years, many other departments have been established to take over the different functions (U.S. Department of the Treasury, 2010). Today, the Treasury Department’s most important roles include managing federal finances, collecting taxes, printing and minting money, supervising banks, advising on economic, monetary, fiscal and tax policy as well as enforcing finance and tax laws. The Treasury Department can also implement economic sanctions against what is considered foreign threats to the national security. To manage the federal finances, the Treasury Department can issue Treasury securities which come in different forms depending on the maturity of the debt. The securities give the government funds to finance for instance deficits, and when the securities reach maturity date the Treasury has to pay back the debt to the investor with interest. U.S. Treasury securities are considered to be among the safest investments and, therefore, they only grant a low yield (U.S. Department of the Treasury, 2011). As opposed to the Federal
Reserve, the Treasury Department is not an independent part of the government. The Secretary of the Treasury serves under the President, and the department’s budget has to be approved by Congress. That also means that when the Treasury wants to intervene in the economy for example by helping troubled corporations, the required funds have to be given by Congress.

During the financial crisis in 2008, the Secretary of the Treasury was Henry Paulson. Paulson had spent most of his career at Goldman Sachs and eventually served as the company’s CEO from 1999 to 2006 when he was appointed as Secretary of the Treasury by President George W. Bush. Working together Ben Bernanke, Timothy Geithner and Henry Paulson were the men behind the bailouts of the financial institutions in 2008.
The creation of the 2008 financial crisis

The New Deal, World War II, The Marshall Plan, The Korean War, the race to the moon, The Vietnam War, the invasion of Iraq, and the entire historical budget of NASA. All of this and more could have been paid for by the total money committed by the U.S. government to bail out the economy in 2008 (Dutton, 2009)(Goldman, 2009).

When the financial crisis hit in 2008, the U.S. government quickly scrambled to save the U.S. economy from a complete collapse. The severity of the crisis started to show itself when an increasing number of homeowners began to default on their mortgages. The defaults caused investors to doubt the soundness of companies that were heavily invested in the housing market. One by one these companies saw their share price drop, and several of them had to be bailed out by the government to ensure they didn’t go under (White, 2008).

To analyze the severity of the financial crisis, our thesis examines the political measures taken in the U.S. since the 1980s. Serving as an introduction, we present a timeline of the major events during the crisis in 2008. We look at which companies were deemed too-big-to-fail by the Fed and the Treasury, which were not, and the subsequent bailouts made by the U.S. government. Following the timeline, the analysis will begin with a detailed examination of deregulation and government policies from the 1980s and forward. We argue that these two combined are the root causes in creating the foundation for the financial crisis in 2008, a foundation that financial institutions used to expand the shadow banking system and develop complex derivatives that played a huge role in the financial crisis. Following this analysis, we investigate the role of lobbyism and political connections in the financial sector and how this helped shape the political landscape in the decades leading up to the crisis. Lastly, we present a brief overview of parts of the Dodd-Frank reform implemented in the wake of the crisis with a specific focus on too-big-to-fail and its relevance in the future.
Overview of collapses and bailouts 2007-2008

Prior to any collapse or bailout of large financial institutions the Fed tried to prevent the crisis when the first signs of the financial crisis started to show themselves in 2007. Bernanke and Geithner’s initial response was to lower the Discount Rate from 5.75 percent to 5.25 percent in September 2007 indicating a concern over the crumbling mortgage market (New York Fed, 2010)(La Monica, 2007). In the rest of 2007, they kept lowering the Discount Rate so by year-end it was 4.75 percent. In January 2008, America experienced the biggest one-year drop in the number of new homes sold\(^1\). The number had fallen 26 percent from the year before (Isidore, 2008). By the end of January, the Fed had further lowered the Discount Rate to 3.50 percent. In the rest of 2008 Bernanke and Geithner gradually kept lowering the Discount Rate due to the tumultuous market conditions and in December, they lowered it to 0.50 percent in order to keep a Federal Funds target rate of 0-0.25 percent. This target rate was kept for the following years. The details of the continuous lowering of the Discount Rate during 2008 will be explained throughout the timeline. The graphical depiction of the timeline in figure 1 serves as a guide to the key financial events in 2008 that this section will focus on.

Figure 1
Timeline of key financial events in 2008

\[^1\] The data distinguishes between new and existing homes.
All the Federal Reserve’s attempts at stabilizing the financial markets in 2007 and 2008 proved insufficient, and many of the major financial institutions on Wall Street faced severe problems. The first of the big Wall Street institutions to face huge financial problems was the well-renowned investment bank, Bear Stearns, in March of 2008. Bear Stearns were known for their risk-taking, and the firm was heavily involved in the subprime mortgage market, which left them very vulnerable to the housing crisis. Bear Stearns’s exposure to the mortgage market and its financial problems worried investors who withdrew their money from the bank, further deepening Bear Stearns’s liquidity problems. On Thursday, March 13 it became obvious for the CEO of Bear Stearns that the investment bank would not last much longer, and he informed Geithner of the situation. Friday morning before the markets opened, Geithner, Bernanke, and Paulson agreed that Bear Stearns was too-big-to-fail. They convinced the bank JPMorgan Chase, who had access to the Fed’s discount window, to finance Bear Stearns’s liquidity problems for 28 days with a $30 billion loan facilitated by the New York Fed. JPMorgan Chase agreed, giving Bear Stearns 28 days to find a buyer for the company; however the problems kept getting worse throughout the day, as the markets saw the rescue as a sign of weakness. Late Friday, Paulson put pressure on Bear Stearns’s management to find a buyer for the firm by Sunday because of the decreasing market confidence. After initial reluctance, JPMorgan Chase after long conversations with Paulson, agreed to buy Bear Stearns with the $30 billion loan from the New York Fed as support Sunday evening (Ryback, n.d.).

The same evening the Fed also decided to address the liquidity problems in the market by lowering the Discount Rate from 3.5 percent to 3.25 percent. Furthermore, the Fed decided to open the discount window to investment banks, through a program called the Primary Dealer Credit Facility (PDCF), allowing them to loan money overnight from the Fed. This was done to address the problems with short-term funding for investment banks that, just like Bear Stearns, experienced investors withdrawing their funds. By opening the discount window for investment banks, the Fed provided a source of funding when it was not available from the market (Brunnermeier, 2008).
Six months after the JPMorgan Chase-Bear Stearns deal, in September 2008 the two government-sponsored mortgage companies Fannie Mae and Freddie Mac went into conservatorship run by the federal government. The two companies had purchased mortgages and pooled them to make mortgage-backed securities (MBS), many of which consisted of subprime mortgages. The exposure to the housing market made Fannie Mae and Freddie Mac vulnerable to the risks of falling house prices and mortgage defaults. This resulted in huge losses for the two companies in 2007 and 2008.

These losses and a potential failure posed a great threat to the financial system. Because the two companies guaranteed their MBS to investors, a failure of Fannie Mae and Freddie Mac would result in investors losing the guarantee and taking a loss if the MBS went bad. The investors exposed to Fannie Mae and Freddie Mac included pension funds, major banks, and mutual funds, and the two companies were thus very interconnected in the financial system (PRMIA, 2011). This made the Treasury Department intervene and on September 7th it took control of the companies’ assets and operations and put them under what is called a conservatorship in order to stabilize Fannie Mae and Freddie Mac as well as the financial market in general. The Treasury also bought MBS and purchased company shares to make sure the companies would stay liquid. The CEOs of Fannie Mae and Freddie Mac were fired, and the Treasury appointed two new CEOs. The conservatorship – or bailout – ultimately cost the Treasury $187.5 billion. However, if one agrees with Keynesian economic theory the money was well spent in order to stabilize the economy and reduce the impact of business cycles. In contrast, if the Treasury had let Fannie Mae and Freddie Mac fail the way liberal thinking would have prescribed, the consequences would have been enormous; however, the unhealthy parts would have been removed from the economy for good. Arguably, the Treasury decided to use Keynesian economic theory to achieve its short-term goals of stabilizing the mortgage markets and promoting financial stability in a period of economic chaos, abandoning the liberal ideologies of Hayek and Friedman they had followed since the early 1980s (Frame, Fuster, Tracy & Vickery, 2015).
Shortly after the bailouts of Fannie Mae and Freddie Mac in September 2008, several Wall Street institutions were in shambles. The seventh largest Wall Street bank, Lehman Brothers, founded in 1844, experienced similar problems to those of Bear Stearns. Lehman Brothers was also heavily involved in the subprime mortgage market exposing them to the threats of falling housing prices. This made investors concerned which gave Lehman Brothers liquidity problems as well. Over a weekend, meetings between top Wall Street bankers and government officials, including Paulson, Bernanke, and Geithner, were held in an attempt to find a solution to the Lehman Brothers problem. The government announced that they would not bail out Lehman Brothers and that Wall Street would have to find a private solution if they wanted to save Lehman Brothers. Meanwhile, the Lehman Brothers management held talks with both Bank of America and the British bank Barclay’s in an attempt to find a buyer for the company (Sorkin, 2008).

Merrill Lynch, the biggest retail broker in the world and the sixth biggest Wall Street bank was one of the participants in the meetings regarding Lehman. They too experienced liquidity problems and decided to begin negotiations with Bank of America in order to secure the future of the company (Gasparino, 2008). Merrill Lynch knew that if Wall Street failed to save Lehman Brothers from bankruptcy, it would paralyze the markets and further frighten investors. The acquisition of Merrill Lynch by Bank of America was announced early Sunday the 14th of September. Later the same day Bank of America withdrew from its talks with Lehman as they considered the deal to be too risky without the government absorbing some of the losses as they did with the JPMorgan Chase-Bear Stearns merger (Paletta, Craig & Solomon, 2008). With Bank of America out of the picture, Lehman Brothers relied on Barclay’s. Even though the Wall Street banks had come up with a solution where they would buy the bad parts of Lehman and Barclay’s only would buy the good parts, this deal eventually collapsed too. There are different explanations for why the deal collapsed, one being that Barclay’s could not get a shareholder vote to approve the deal before Monday (Sorkin, 2008). Another reason was that the British securities regulator had discouraged Barclays from accepting the deal (Sorkin, 2008), and a third saying that Barclays walked away for the same reasons as.

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2 See Appendix 1 for total assets of large banks in 2007
Bank of America did (Griffiths, 2008). In the end, the result was the same and Lehman Brothers filed for bankruptcy Monday morning the 15th of September. Though they would never admit to it, the fact that the U.S. government allowed Lehman Brothers to fail could be seen as a signal to the financial markets that no one is too-big-to-fail. Letting Lehman Brothers go bankrupt was a different approach by the government to deal with failing financial institutions from the Keynesian-inspired bailout of Bear Stearns. The new approach was more inspired by Hayek’s theory that allows the free market to kill the bad parts in order for the economy to heal.

After a busy weekend where the second biggest Wall Street bank (Bank of America) acquired the sixth biggest Wall Street bank (Merrill Lynch), and the seventh biggest Wall Street bank (Lehman Brothers) filed for bankruptcy, Bernanke, Geithner and Paulson faced new problems. American International Group (AIG) the largest insurance company in the U.S. (Sjostrum Jr., 2009) experienced liquidity problems and was running out of cash fast. AIG, ranked 10th in the U.S. in the 2007 Fortune 500, dealt with a large variety of businesses from accident and health insurance policies, to aircraft and equipment leasing to different investment related services (Sjostrum Jr., 2009). However, it was AIG’s heavy investment in credit default swaps (CDS) that almost forced the company into bankruptcy. AIG had insured large numbers of MBS and Collateral Debt Obligations (CDO) from other banks and earned large profits from them during the boom. As long as the insured bonds did not fail, AIG would not have to pay any money to the banks and would instead collect the insurance premium without investing any money – all the banks received when signing the insurance of a bond was AIG’s promise to pay the bond if it fails. As AIG did not have to put any money down when it issued CDS, and it earned solid profits on the premium, its profits were only limited by the number of insurances it could make. This caused AIG to insure more than 526 billion dollars worth of CDOs. CDOs and CDS will be explained in detail later in the paper.

When the crisis hit AIG’s revenue on insurance premiums dropped proportionally with the failing insured bonds. At the same time, AIG had to pay out money to the banks

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3 See Appendix 1 for total assets of large banks in 2007
that had insured the failed bonds, and investors who had bought CDS betting these bonds would fail. The large losses published by AIG worried investors that had loaned money to AIG’s investment program. The worried investors decided to withdraw their cash from AIG to protect themselves from AIG’s exposure. In order to pay back the investors, AIG had to transfer funds from other divisions of the company, as they had invested a large portion of the investors’ cash in MBS. To make matters worse for AIG, the large losses caused the credit rating agencies to reevaluate the company’s rating and downgrade them. This created new problems for the company, and it soon became evident that AIG did not have enough cash to cover all the insurance policies it had made.

AIG originally tried to find a private solution to its cash problems; however, when this failed the Fed and the Treasury stepped in and authorized an 85 billion dollar loan giving the U.S. government a 79.9% stake in the company’s equity (New York Fed, n.d.). The 85 billion dollar loan stabilized AIG short term. However, the severity of the market situation caused the Fed and Treasury to grant AIG just under 100 billion more in loans over the next year, totaling the bailout at 182.3 billion dollars (Schaefer, 2012).

A little under a week after the AIG bailout the two investment banks Goldman Sachs and Morgan Stanley changed to bank holding companies. The transformation subjected the two former investment banks to more regulation by the Fed; however, it also gave them access to funds from the Fed’s emergency facilities. This helped reassure the two banks’ investors, and positioned the two in a better position for future mergers or acquisitions (Hilsenrath, Paletta, & Lucchetti, 2008). The transformation of Goldman Sachs and Morgan Stanley into bank holding companies resulted in Wall Street losing its last two independent investment banks (Schroeder, 2008).

In October 2008, the Treasury Department requested $700 billion from Congress in an effort to stabilize the economy. Congress authorized the Troubled Asset Relief Program (TARP) which was signed into law by President George W. Bush on October 3rd. The TARP funds were used on five different programs, one of which was $250 billion used to stabilize the banking institutions providing capital to 707 financial institutions around the U.S., ranging from $25 million to $301,000 (U.S. Department of
the Treasury, 2015). Besides providing funds to financial institutions, the TARP funds were also used to stabilize AIG and the U.S. auto industry.

In addition to the funds from the Treasury, the Federal Reserve again lowered the Discount Rate. In October, they lowered it one percentage point to 1.25 percent, and in December, they lowered it to its final target rate of 0-0.25 percent. Besides lowering interest rates, the Fed’s attempt to save the economy resulted in a dramatic change in its balance sheet. At the beginning of September 2007, the Fed’s balance sheet stood at $857 billion (Board of Governors of the Fed, 2007) and by the end of 2008, it had increased by more than 260 percent to $2.247 trillion (Board of Governors of the Fed, 2009). This increase is among other things a result of the loans facilitated to AIG and the JPMorgan Chase acquisition of Bear Stearns, as well as the PDCF.\(^4\)

When you look at the financial crisis of 2008, it is easy to see that Hayek and Friedman’s free market ideologies were not followed by the government when the market collapsed, with the exception of Lehman Brothers’ failure. The Treasury and the Fed intervened and prevented the financial market from a complete collapse, looking to Keynesian economic theory to save the economy. However, Hayek and Friedman’s argument for a free market can still be valid as the government prior to the crisis intervened heavily in the marketplace through the promotion of homeownership (i.e. Fannie Mae and Freddie Mac). Proponents of Hayek and Friedman could thus present the argument that the government helped cause the crisis through interventions in the market. If the government had not created Fannie Mae and Freddie Mac the crisis might not have happened or, at least, it might have looked very different. Furthermore, it can be argued that the bailouts made by the U.S. government during the financial crisis have placed the U.S. in a difficult situation as several of the bailed out companies that were already too-big-to-fail became even larger, which only exacerbates the problem in the future. The controversy of too-big-to-fail will be discussed in the last part of the paper.

\(^4\) See appendix 2 for the development of Federal Reserve assets between 2007 and 2014
Deregulation and government policies since the 1980s

The timeline presented above paints a picture of how the financial crisis ripped through Wall Street. Furthermore, it shows how these financial institutions were connected and how they could have brought each other down creating the dilemma for the U.S. government to either bail them out or let them fail. The following part of the paper will go into details by examining financial deregulation and government policies from the 1980s and forward. We argue that these two combined created the foundation for the financial crisis in 2008. We start our analysis by looking at the Glass-Steagall Act and what influence it had on the U.S. economy and the financial sector in the post-Depression era. We continue our analysis by looking at how different political measures have deregulated the financial sector and what influence these had on the financial crisis in 2008. We look at how various administrations have pushed for homeownership for all Americans including the creation of Fannie Mae and Freddie Mac, and how this helped create a housing bubble. After analyzing deregulation and government policies, we will continue by looking at what emerged from this foundation that we argue caused the crisis.

The rise and fall of the Glass-Steagall Act

The stock market crash in October 1929 marked the beginning of a long period of economic turmoil and depression. Gross domestic product in the United States declined almost 27 percent from 1929 to 1933, and unemployment increased between 17 and 20 percentage points depending on which statistic you look at (Margo, 1993). In the early 1930s, President Franklin D. Roosevelt introduced a series of government programs called the New Deal which aimed to get the American economy and the American people out of the Great Depression. Inspired by Keynesian macroeconomic theory, The New Deal was a government spending package designed to stimulate and stabilize the American economy as well as to create jobs during the problematic economic times.

One of the acts under the New Deal was called the Banking Act of 1933 more commonly known as the Glass-Steagall Act. The Glass-Steagall Act came into effect as a
reaction to a series of investigations held by the U.S. Congress examining the cause of the depression. The hearings uncovered a system of fraud and reckless speculation among Wall Street executives, using depositors’ funds and promoting securities (Démos, n.d.). A shocked public and Congress demanded an extensive reform and in June 1933, the Glass-Steagall Act was signed into law. The purpose of the Glass-Steagall Act was thus not only to regulate and create a safer banking system, but also to reestablish confidence in the banking system.

One of the measures the Glass-Steagall Act took in creating a safer banking system was to separate commercial banking and investment banking, forcing banks to choose what type of business they wanted to partake in. Commercial banks would only be allowed to conduct normal banking activity, taking in deposits and creating loans, while investment banks could deal in more speculative securities but not allowed to take in deposits. The separation of the two meant that it would no longer be possible for them to do both, or to have close connections with each other (Maues, 2013). This measure was taken as a response to the extensive speculation many congressmen felt had fueled the economic crisis that led to the Great Depression (Kregel, 2010).

During the early years of the Great Depression nearly 8,000 banks failed. As a result, American depositors lost close to $1.3 billion due to bank failures (FDIC, 2005). To prevent this from happening again, the Glass-Steagall Act also created the Federal Deposit Insurance Corporation (FDIC), which would insure people’s bank deposits up to $2,500\(^5\) in the case of bank failures. The FDIC would be an independent agency receiving no funding from Congress. It would be funded by premiums paid by member banks that wanted deposit insurance coverage (FDIC, 2014). Since the creation of the FDIC no depositor in an insured member bank has lost a penny of his or her deposits. The measures of the Glass-Steagall Act worked. Crises and panics had been regular before the depression but with the deposit insurance, bank failures had less impact now that people’s money were safe. This also restored confidence in the American financial markets (Démos, n.d.). Despite this, the American economy did not recover wholly until after World War II when the financial sector grew rapidly.

\(^5\) This number has since been raised numerous times and today the FDIC insures deposits up to $250,000 (FDIC, 2014).
In the post-World War II period, investment banks came up with new financial product innovations that were far more competitive than the products that were offered to business borrowers by regulated commercial banks (Kregel, 2010). Under the Glass-Steagall Act, commercial banks were limited to dealing with deposits and loans, while investment banks were more free to come up with new ways to make money. This meant that while the business models of investment banks developed over time, commercial banks were stuck in the depression era with no room for innovation. Therefore commercial banks were against the provisions of the Glass-Steagall Act separating them from dealing with securities and investments. They spoke loudly about this, and they fought hard to make regulators loosen the regulations. Naturally, investment banks were against loosening regulations, as it would increase competition. Regulators largely accepted the complaints of the commercial banks and the separation became less and less clear. An example of the demise of the Glass-Steagall Act came in the 1980s when three large commercial banks including Citicorp and JPMorgan Chase argued that if their subsidiaries did less than half of their business in for instance mortgage-backed securities then they would not be “principally engaged” in “ineligible securities” and thus not in violation of the section 20 of Glass-Steagall (Funk & Hirschman, 2014). This was a new interpretation of the rule, and it would essentially allow commercial banks to own small investment banks, which they had been prohibited from previously. The regulators in the Reagan administration did not have many objections to this new interpretation, and they did not think it was in violation of the law. They also thought it was a good policy as it promoted free market competitiveness, in line with their newly adopted economic theory based on Friedman’s ideology. Unsurprisingly, the investment banks were unhappy with this decision and they tried to get it reversed in the court system. However, the court upheld the decision (Funk & Hirschman, 2014).

During the 1990s, the Federal Reserve further loosened regulations on commercial banks allowing them to increase their share of securities investment activities. Evidently the provisions of the Glass-Steagall Act were gradually eviscerated, and by the time the law was repealed in 1999, there was virtually no difference between the activities of commercial and investment banks. The fact that the Glass-Steagall Act...
had been diluted as much as it had clearly showed the attitudes of the Federal Reserve and regulators toward financial regulation. The election of Ronald Reagan in 1980 marked the beginning of a free market way of thinking where the role of the government would be a lot smaller.

**Ronald Reagan and the economic shift**

When Ronald Reagan took office in 1981 he inherited an economy in terrible shape – it had not been worse since the Great Depression. After World War II America had enjoyed great economic success mainly because of the big competitive advantage of American industrial production over Europe and Japan who had had their industries ruined during World War II. However, by the early 1970s European and Japanese industrial production had caught up and with newer and better technology they had a better competitive advantage than American industry. This, combined with other factors such as increasing job demand, an expensive Vietnam War and high levels of government spending, created an economy with stagnation in growth and employment and inflation in consumer prices – a phenomenon called stagflation. According to Keynesian economic thinking which had been dominant in America in the post-World War II era, stagflation should not be possible. Keynesians believed that high inflation only occurred in periods of high economic growth and low unemployment and vice versa (Lerner, 1977). As Keynesian macroeconomic thinking could not explain the stagflation of the 1970’s, government officials started to question Keynes’s ideology and began to look towards the ideologies of Friedman and Hayek.

The Chairman of the Federal Reserve at the time was Paul A. Volcker (1979-1987). As Chairman of the Fed, Volcker had the tools available to attempt to manage the money supply, something that Friedman previously had criticised the Fed for not doing properly during the Great Depression. Due to stagflation Volcker had to use dramatic measures to get the economy back on track. Volcker accepted that in order to fight the high levels of inflation the U.S. economy had to go through a bad period in order to get better (Medley, 1979). Inflation rates at the time were around 11 percent and fighting this was Volcker’s main objective, as he believed that all other government policies would
fail as long as inflation was out of control (Meltzer, 2010). Volcker recognized that they key to stopping inflation was to manage inflation expectations because as long as people think prices will keep increasing they have incentive to spend today. Volcker was inspired by Friedman, who argued that it was not possible to have a target of low unemployment while permitting high inflation. Controlling inflation is one of the primary goals of the Fed, and in an attempt to reach this goal Volcker raised the Federal Funds Rate to 20 percent and kept it there until inflation was under control (Amadeo, 2015).

During these years, Volcker was heavily criticized not only by the public but also by the government for bringing the U.S. into a recession. Several members of the government wanted Volcker to resign or loosen his monetary policies, but Volcker and the Fed stood firm on its policy. Despite this Volcker had support from President Reagan who also became very unpopular and as a result, Reagan’s approval rating\(^6\) fell from 68 percent in May 1981 to 35 percent January 1983 (Medley, 1979) (Samuelson, 2015). The pressure on Volcker during his first years as Chairman of the Fed is a good example of why it is important that the Fed is an independent agency within the U.S. government. Despite members of the government wanted Volcker gone, only he could make this decision. However, in 1987 Volcker resigned as Chairman of the Federal Reserve when his term ended. He was against the Reagan administration’s heavy deregulatory policies and had problems with the appointees and officials of the administration (Meltzer, 2010). Economist Joseph Stiglitz believes that Volcker was “fired” (asked to leave) because he was not an adequate de-regulator (Gardels, 2008).

The late 1970s and early 1980s indicated a shift in economic thinking from a Keynesian approach to a more neo-liberal approach inspired by Friedrich Hayek and Milton Friedman (O’Brien & Williams, 2010). This way of thinking promoted a free market philosophy and a more deregulated economy than had been in place in the previous decades. The shift was fueled further after Friedman’s theory of the relationship between inflation and unemployment had been proven to be successful in Volcker’s battle against inflation. In the United States, this shift was personified by Ronald Reagan,

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\(^6\) Percentage of American people that think the president is doing a good job
who easily won the 1980 presidential election over President Jimmy Carter whom the American people had lost faith in after years of economic malaise.

Ronald Reagan promised the American people to provide something completely different than the previous administration. He promised to get the government off the backs of the American people by lowering taxes, decreasing government spending and removing government regulation on businesses. The belief was that tax revenues would not decrease in spite of the tax cuts, as more people would get a job thus increasing the taxpayer base. Reagan has a reputation as a spending and tax slasher, but in reality, the federal budget increased during his presidency with 61,000 new federal government employees. Moreover, after an initial tax cut program, Reagan raised taxes several times after to balance the deficit that had increased significantly in the 1980s. (Green, 2003). Despite this, Reagan’s economic plan was focused on deregulating the economy and especially the financial markets.

In 1982, he signed the Garn-St. Germain Depository Institutions Act, which deregulated banks and savings institutions. The Act allowed them to be more competitive by allowing them to make commercial loans thus entering into unfamiliar and riskier territory (Sherman, 2009). It is widely accepted that the Garn-St. Germain Depository Institutions Act was one of the main causes of the savings and loan crisis in the 1980s where several savings and loan institutions failed because they had taken on too risky activities that they had little experience with. As a result of the savings and loan crisis, the number of savings and loan institutions dropped almost 50 percent and after government intervention the crisis ultimately cost taxpayers $210 billion (Sherman, 2009). The crisis was an indication of the dangers of financial deregulation that expanded the roles of certain industries and allowed them to deal in markets they had no experience with. However, it was the political attitude of the time to keep the government out of businesses’ actions.

Another Act signed into law by Reagan was the Alternative Mortgage Transactions Parity Act (AMTPA) in 1982. The Act deregulated the mortgage industry allowing lenders to sell adjustable-rate and interest-only mortgages. These loans were often argued to be confusing to consumers who did not understand what they were entering into. One example could be teaser rate loans where the interest rates are low at
first and then reset at a higher level after a period of time (Sherman, 2009). A result of the Act was that lenders began to target lower-income, higher-risk borrowers by pushing subprime mortgages, as it proved to be a highly profitable market due to the higher interest rates on subprime mortgages. The high profits made many lenders push these subprime mortgages to borrowers that would normally have qualified for a conventional mortgage. This meant that in 2006 61 percent of subprime borrowers actually had a credit rating high enough to qualify for a conventional loan (Sherman, 2009).

Where most critics criticize Reagan for increasing inequality and showing fiscal irresponsibility, Paul Krugman (2009a) focuses his critique on the financial deregulation that happened in the 1980s. Krugman argues that deregulation in the Reagan era played a major role in the 2008 financial crisis, and believes that the looser mortgage lending standards and looser consumer credit standards in the 1980s marked a change in American behavior. This change can be seen in the increase in household debt since the 1980s. When Reagan took office household debt in America was around 60 percent of income. In 2007, that number had increased to 119 percent (Krugman, 2009a). An explanation for the increase in debt is that consumer credit plays a very important role in American consumption culture as people, in order to keep-up-with-the-Joneses, buy their things on credit. This is partly a result of people in the second half of the 20th century began to compete and identify with groups of higher socioeconomic status. Professor Andrew Oswald further connects keep-up-with-the-Joneses with herd behavior as studies have shown that one is more likely to buy a new car if one's neighbor wins the lottery (Oswald, 2011). The increasing debt was not a problem as long as people’s houses continued to increase in value because it allowed them to withdraw equity from their house to finance their debt. However, with the increasing debt-to-income ratio facilitated by loose lending standards, people were bound to start defaulting on their mortgages causing the housing bubble to burst, Krugman argues.

Another indication of Reagan’s free market philosophy was the appointment of Alan Greenspan as Chairman of the Federal Reserve in 1987. Alan Greenspan served as the Chairman of the Fed for 18 years (1987-2006) and is the second longest serving Chairman of the Fed after William M. Martin (1951-1970) (Harress, 2013). Joseph
Stiglitz argues that Greenspan was appointed by Reagan because of his anti-regulation attitudes (Gardels, 2008) and it is widely known that Greenspan was inspired by Ayn Rand and thus a firm believer in deregulation and minimal government intervention (Sherman, 2009). This could be seen in 1987 when Greenspan was one of the regulators behind the re-interpretation of the Glass-Steagall Act that increased the amount commercial banks were allowed to be involved in the securities market, as mentioned earlier. He argued that the market would not take on too large risk and that the invisible hand would eventually correct the market if it got out of hand.

**Alan Greenspan and monetary policy of the Federal Reserve**

Alan Greenspan is by many considered to be the most influential chairman in the Fed’s history, and considered to be a market oracle (Ydstie, 2006). Blinder and Reis even go as far as calling him “the greatest central banker who ever lived” (Blinder & Reis, 2005) - however, to be fair they stated this prior to the crisis and their opinion might have changed considering what happened shortly after his term. During Greenspan’s 18 years as Chairman of the Fed, he steered the economy through two minor recessions and created the two longest periods of economic expansion in the U.S. history. During Greenspan’s term the U.S. experienced a period of economic stability and growth, and unemployment hit its lowest level in 30 years. Despite his success he has been heavily criticized from different sources, for not bursting the stock market bubble during the 90’s, and for keeping interest rates too low for too long (Ydstie, 2006). However, looking at Greenspan’s free market belief it makes perfect sense why he chose not to do so. Greenspan did not believe one of his predecessors William M. Martin’s perception of the role of the Fed being “To take away the punch bowl just when the party gets going” (Petersen, 1998). Furthermore, Greenspan argued that the Fed could not predict bubbles or overstimulated economies when they were forming. In January 2004, Greenspan spoke at the meetings of the American Economic Association, where he presented his view on bubbles saying that “Instead of trying to contain a putative bubble by drastic actions with largely unpredictable consequences, we chose, as we noted in our mid-1999 congressional testimony, to focus on policies ‘to mitigate the fallout when it occurs and,
hopefully, ease the transition to the next expansion’.” (Greenspan, 2004). This perception of the Fed’s role by Greenspan consistent with the moral hazard theory can be argued to have changed investors’ incentive to take on increased risk, and how the term ‘Greenspan Put’ was developed. ‘Greenspan Put’ was a term made by Wall Street and it was the idea that “the Federal Reserve can be relied upon in times of crisis to come to the rescue, cutting interest rates and pumping in liquidity” (The Economist, 2000). Greenspan told the markets that he considered the role of the Fed to be to pick up the pieces after a bubble burst by using all the Fed’s tools available to stabilize the markets. By doing so financial firms knew that they could expect the Fed to step in and save the economy during a crisis either through bailouts of financial firms considered too-big-to-fail or by lowering the Federal Funds Rate rate. This is a classic example of moral hazard as it minimized the need for firms to worry about catastrophic downside, because they knew the Fed had a limit to how bad they would allow the economy to get before intervening, while at the same time allowing them to take on increased risk and reap higher returns, as the Fed would not burst potential bubbles in accordance with the dominant neo-liberal ideology of the time. This issue of moral hazard in relation to the crisis is also discussed by the FCIC in the Financial Crisis Inquiry Report (FCIR) that investigates the crisis: “This asymmetric policy—allowing unrestrained growth, then working hard to cushion the impact of a bust—raised the question of “moral hazard”” (FCIC, 2011).

The lax monetary policy exercised by the Fed and Greenspan since the mid-1990’s has been argued to promote speculation, leading to the stock market bubble (1997-2000) and the housing bubble in the 2000’s (Denning, 2011). Especially the low Federal Funds Rate in the early 2000’s has been argued to have played a major role in forming the housing bubble (Wilmarth Jr, 2009). After a recession in 2001, caused by the bursting of the stock market bubble, Greenspan and the Federal Reserve lowered the Federal Funds Rate from 6.5 percent in January 2001 to 1 percent mid-2003 (see figure 2) fearing that the economy could go back into recession (Labonte, 2015). Furthermore, the Fed lowered interest rates to save the economy by increasing the money supply and by picking up the pieces after the bubble had burst, consistent with Greenspan’s belief of what the role of the Fed should be. Greenspan, in a testimony before the Joint Economic
Committee on 13 November 2002, argued that the low interest rates would push investors into the housing market increasing home values and allowing homeowners to withdraw equity from their home values, thus increasing spending in the general economy - “… it is important to recognize that the extraction of equity from homes has been a significant support to consumption…” (Greenspan, 2002a). The reasoning was that the low interest rates that would decrease yield on Treasury Bonds, would make investors look for other safe investment opportunities such as housing. The low interest rates targeted by the Fed were thus an attempt to minimize the effect of the bubble’s collapse while at the same time boost the economy.

The low interest rates led a lot of households to take out adjustable rate mortgages, believing the Fed would keep the interest rate low. These homeowners faced problems when the Fed began increasing the Federal Funds Rate in the mid-2000s as seen in figure 2. Households with adjustable rate mortgages, many of them subprime borrowers, could not afford to pay interest and principal as their adjustable mortgage payments increased with the Federal Funds Rate, and they thus had to foreclose on their homes.

Figure 2
Federal Funds Target Rate

Source: Federal Reserve Bank of St. Louis, 2015a
Bill Clinton and the unregulated derivatives market

The era of deregulation continued in the 1990s with the Democrat Bill Clinton as president, despite that it is usually the Republican Party that is associated with wanting a minimal role for the government in the economy. In 1994, Clinton signed the Riegle-Neal Interstate Banking and Branching Efficiency Act, which allowed bank mergers and acquisitions across state borders. This meant a significant decrease in the number of banks, and between 1990 and 1998 the number of banks decreased by 27 percent, which naturally increased the size of the remaining banks (Sherman, 2009). An example of a big merger in the financial industry came in 1998 when Travelers Insurance Group merged with Citicorp to form Citigroup. The merger was technically illegal under the Glass-Steagall Act but both the company executives and the regulators were confident that the Act would be repealed in Congress within a short period of time. The merger made Citigroup the largest financial company in the world at the time (Sherman, 2009). The Citigroup executives and the regulators turned out to be right. In 1999, Congress passed the Financial Services Modernization Act, also known as the Gramm-Leach-Bliley Act, which repealed the remaining part of the Glass-Steagall Act. As a result financial institutions were now allowed to operate in banking, securities and insurance under the same roof (Sherman, 2009). This allowed for the formation of mega-banks – a title suitable for the aforementioned merger of Travelers Insurance Group and Citicorp into Citigroup. The size of banks and the too-big-to-fail controversy will be elaborated later in the paper.

Naturally, the new law made companies venture into new territories of financial products with which they had less experience. A good example of this is AIG, the world’s biggest insurance company that had a strong core insurance business. However, in the 2000s the company started to diversify to complex financial products and, and a small department in the firm had invested heavily in the credit default swap (CDS) market. This is what brought AIG to the ground in 2008 and “forced” the government to bail out the company (Tymoigne, 2009) as mentioned in the timeline.

In 2000 Congress passed the Commodity Futures Modernization Act with support from the Clinton administration. This law made sure that the over-the-counter (OTC)
A few years earlier, the head of the CFTC at the time, Brooksley Born, had warned that it would be dangerous to keep the OTC derivatives market unregulated. In a testimony before the House Committee on Banking and Financial Services, Born raised concerns about the risks involved in an unregulated market. She argued that because of the increasing size of the OTC derivatives market, a comprehensive examination of the market would have to be done, in order to assess the risks involved (Born, 1998). However, Born’s concerns were not shared by Fed Chairman Alan Greenspan, Treasury Secretary Robert Rubin and his successor Larry Summers. They did not see any reason to interfere with the OTC derivatives market, and they put a lot of pressure on Born, both publicly and privately. In a public testimony before the Senate Committee on Agriculture, Nutrition, and Forestry on July 30, 1998 Summers stated “As you know, Mr Chairman, the CFTC's recent concept release has been a matter of serious concern, not merely to Treasury but to all those with an interest in the OTC derivatives market. In our view, the Release has cast the shadow of regulatory uncertainty over an otherwise thriving market...We believe it is quite important that the doubts be eliminated.” (U.S. Department of the Treasury, 1998). In addition, according to former CFTC top official Michael Greenberger, Larry Summers in a private conversation had said to Born that “You’re going to cause the worst financial crisis since the end of World War II; that he has […] 13 bankers in his office who informed him of this. Stop right away. No more” (Kirk, 2009). Congress agreed with Rubin, Summers and Greenspan’s view on the OTC derivatives market and put a freeze on the regulatory powers of the CFTC. As a result Born resigned in 1999, realizing that she could not do anymore to regulate the OTC derivatives market. Later that year, Greenspan, Rubin and Summers along with Born’s successor, recommended that there should be no regulation on derivatives, which ultimately resulted in the Commodity Futures Modernization Act (Sherman, 2009). The implementation of the Act meant that the unregulated derivatives market quickly grew from an estimated $106 trillion in 2001 to an estimated $531 trillion in 2008 (Sherman, 2009) and that 80 percent of all derivatives were sold OTC (Crotty, 7)

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7 Derivatives that are not traded on a formal exchange.
Regulators trusted the companies dealing with these derivatives to self-regulate to prevent any possible risks.

**George W. Bush and the continuing push for homeownership**

When George W. Bush was elected president in 2000, he made increasing homeownership an important part of his political agenda, like many presidents before him. Despite homeownership being in focus during Bush’s term, an important rule change influencing the outcome of the 2008 financial crisis came in 2004 when the Securities and Exchange Commission (SEC) agreed to lower capital requirements for the five big investment banks, Goldman Sachs, Morgan Stanley, Merrill Lynch, Bear Stearns and Lehman Brothers. The decision allowed the banks to invest a bigger portion of their reserves than before (Labaton, 2008). The agreement also included a rule that allowed the SEC to monitor the banks’ books. However, the commission never really prioritized this opportunity, and the banks were practically left to handle the monitoring of risks by themselves (Labaton, 2008). The SEC decision thus allowed banks to make highly leveraged investments without any government oversight. Interestingly, as explained earlier, only two of the five investment banks survived the financial crisis four years later.

In 2000 Bush signed the American Homeownership and Economic Opportunity Act, which eased financing of home mortgages and provided financial assistance to poor, elderly and people with disabilities. In 2003, he signed the American Dream Downpayment Act, which provided $200 million in down payment assistance to more than 40,000 low-income families (McCarty, Poole, Romer & Rosenthal, 2010). The American Homeownership and Economic Opportunity Act and the American Dream Downpayment Act both relaxed standards for mortgage lenders, which for instance can

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8 One example of a previous push for homeownership was the Community Reinvestment Act which was passed in 1977. The Act was passed in an attempt to discourage banks from engaging in redlining practices which were argued to cause a decline of many low income, often minority neighborhoods (Ardalan, 2006). Redlining is when a bank makes a decision to not make loans in a particular neighborhood based on factors such as the racial composition and the average income level of that neighborhood, regardless of the creditworthiness of individual loan applicants (Ardalan, 2006). Carney (2009) argues that the Community Reinvestment Act encouraged looser lending standards, a trend that continued during both the Clinton and Bush administrations.

9 The higher the proportion of borrowed money in an investment, the higher the leverage.
be seen in the decreasing rate of denials for home mortgages. In 1997, more than 30 percent of home mortgage applications were denied. In 2005, the rate of denials had dropped to around 20 percent. Furthermore, the rate of denials for black people dropped from almost 60 percent to around 30 percent in the same period, which shows that minorities also were prioritized in the government programs (Gramlich, 2007). The decrease in mortgage denials helped increase homeownership in America. From 1994 to 2004 the overall homeownership rate rose from 64 percent to 69 percent, and the homeownership rate for black people rose from 42 to 49 percent (Gramlich, 2007). In comparison, the overall rate had actually decreased by one percentage point in the previous 20 years, never surpassing 65.8 percent (St. Louis Fed, 2015b) which shows that the increase in the 1990s and early 2000s was indeed significant. The rate of homeownership in America peaked in 2004, and after the financial crisis, the level has dropped to 63.4 percent halfway through 2015. These numbers show that the government programs that pushed for homeownership to all Americans created an unsustainable bubble that ultimately burst, and brought the homeownership numbers back to pre-crisis levels, as shown in figure 3. The inflation and deflation of the bubble is clearly visible on the graph.

Figure 3

Homeownership Rate for the U.S.

Source: St. Louis Fed, 2015b
The way that various administrations pushed for homeownership to all Americans played a major role in the formation of the housing bubble that triggered the financial meltdown in 2008, partly because it created a moral hazard. As more and more people got access to home mortgages, the demand for houses went up, which further increased home values. As long as home values were high, the banks were happy as the houses functioned as collateral for the mortgages they had given to borrowers. Another driver of house prices is the American desire to keep-up-with-the-Joneses as people were allowed to buy houses that were beyond their means. The loose lending standards that began during Reagan’s term ultimately resulted in loans that did not require any down payment or assets which allowed Americans to live beyond their means. However, they also created a moral hazard as Americans with no assets tied to their house had an increased incentive to default on their mortgage if the house value dropped below the value of the mortgage. Figure 4 shows the development of housing prices in the United States from early 1990. In the seven years from the beginning of 2000 to the peak at the beginning of 2007, housing prices increased more than 60 percent. That is significantly more than in the previous ten years where prices had increased only 38 percent.

Figure 4

**Development of housing prices in the U.S. (Q1 1990=100)**

Source: The Economist, 2015
Earlier we mentioned that Fed Chairman Alan Greenspan in the early 2000s had kept interest rates at a very low level. There is thus a strong link between the Federal Reserve’s expansionary monetary policy in the early 2000s and the increase in housing prices, which proved to form the bubble that triggered the crisis. This supports our argument that government policies helped create the financial crisis. Some experts have argued that the low interest rates in the early 2000s were due to an increase in savings. However, as Taylor (2009) argues, there is no evidence for a savings increase. On the contrary, saving levels were very low in the early 2000s compared to previous decades (Taylor, 2009). This is also supported by the numbers looking at household debt provided earlier in the paper. The numbers show that household debt almost doubled from 1980 to 2007 indicating that savings did not increase in the early 2000s.

As banks started to give mortgages to more and more low-income families, the risk of mortgage defaults increased, together with the risk of moral hazard. Most families make their mortgage payments on schedule. However, the low-income families targeted by the looser lending standards under the AMTPA are very vulnerable to small changes in their household that could change their financial situation significantly. For instance, if one in the household loses their job, or if there is a health problem in the family, it could mean that the family would not be able to make its mortgage payments on schedule. Health problems can be critical because many of the low-income households do not have health insurance, and health problems would thus represent a significant expenditure for a low-income family. The desire of low-income households to keep-up-with-the-Joneses meant that many Americans could not afford to pay their mortgages that were taken to buy houses beyond their means. In a study from 2008, Martin and Schrum found that the American desire to keep-up-with-the-Joneses contributed strongly to the increase in subprime mortgage defaults. They argue that this desire “pushed borrowers to buy larger, more expensive homes, even when they knew they would likely not be able to afford payments on the mortgage.” (Martin & Schrum, 2008). When a household fails to make its mortgage payments, it has to default on the mortgage and foreclose on the house, which is then taken over by the bank. On a small scale this is not a huge problem for the overall economy, but when thousands of families start to default on their mortgages, there is an increase in the supply of houses, which in turn causes the prices to decrease.
home values decrease significantly other families that are able to pay their mortgage, see that they are paying back a mortgage that is bigger than the value of their house. This gives them an incentive to default on their mortgage, compliant with moral hazard, which further causes house prices to fall. This decrease in prices on a large scale, among other things, caused the housing bubble to burst. These mechanisms are what happened leading up to the financial meltdown in 2008, and they were partly fueled by the homeownership programs put in place by the George W. Bush administration.

To further understand the homeownership culture in America it is relevant to go back in time, before the 1980s. Owning a home is seen as an important factor for personal success and for keeping-up-with-the-Joneses which has been acknowledged by many administrations over the years (DePalma, 1988). To facilitate this, the United States government has given different incentives for people to own a house. For example, house owners can deduct mortgage interest and local property taxes from their Federal income taxes. Furthermore, profits from the sale of a house are not taxed as long as the seller buys a home of equal or greater value within two years (DePalma, 1988). In addition to the financial incentives for individual households, the government also made it easier for mortgage lenders to increase their mortgage portfolios by creating the two companies Fannie Mae and Freddie Mac.

Fannie Mae, or Federal National Mortgage Association, was created in 1938 as part of Roosevelt’s New Deal. It was created to increase homeownership in America. Fannie Mae buys mortgages from lenders, so they do not have to keep the mortgages on their books for thirty years, which is the most common duration for a home mortgage. When Fannie Mae buys a mortgage from a mortgage originator, it frees up capital for the lender so that he can lend out new mortgages. The purchasing of mortgages is called the secondary mortgage market, as it does not involve originating mortgages (PRMIA, 2011). In 1970, Freddie Mac was created to make the secondary mortgage market more competitive, and it basically does the same thing as Fannie Mae. The two companies buy mortgages and bundles them to make mortgage-backed securities (MBS) which they

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10 The main difference between the two is that Fannie Mae primarily buys mortgages from commercial banks while Freddie Mac buys mortgages from smaller thrift institutions.
then sell to investors, often including a guarantee on the loan if it were to default. They also keep some of the MBS on their own books. Mortgage-backed securities will be explained in greater detail later in the paper.

Both Fannie Mae and Freddie Mac are government-sponsored enterprises (GSE), which means that they are privately owned but sponsored by the government. The government does not guarantee the creditworthiness of GSEs; however, many perceive them to be guaranteed by the government as it is unlikely that the government would let such important institutions fail. The status of GSEs grants Fannie Mae and Freddie Mac some advantages that the private securitization companies do not have. These advantages include savings on interest rates when they borrow money as the implicit government guarantee increases the willingness of lenders to charge lower interest rates. The government sponsorship also means that they do not have to pay state and local income taxes often argued to grant them a duopoly and to make the market noncompetitive (McKinley, 1997).

Initially, Fannie Mae and Freddie Mac had very high standards of purchasing mortgages, requiring lenders who wanted to sell their mortgages to demand good credit ratings from their borrowers. However, in the last few decades, political pressure from various administrations made Fannie Mae and Freddie Mac lower their requirements when purchasing mortgages to get more people to own a home. In other words, lending money to lower-income, or subprime, borrowers (PRMIA, 2011). This led lenders to issue riskier loans as they, compliant with moral hazard theories, could increase their risk without increasing the cost associated with the risk because they would pass the risk on to Fannie Mae and Freddie Mac. The lenders knew that Fannie Mae and Freddie Mac would buy the risky mortgages due to political pressure. In 2001, the government’s target was to make 50 percent of Fannie Mae and Freddie Mac’s portfolios be made up of loans to low and moderate-income borrowers (Holmes, 1999). In 2007, the actual number was 55 percent (Katz, 2015), which showed that Fannie Mae and Freddie Mac were just above the goal set by the government. The fact that Fannie Mae and Freddie Mac’s portfolios had such high ratios of low-income loans left them very vulnerable to falling housing prices and defaults which became evident when the market turned.
As previously explained households with no assets or money attached had an increased incentive according to moral hazard theory to default on their mortgage if they stood to lose on their investment. In addition to the mortgages Fannie Mae and Freddie Mac had on their own books, they also guaranteed many of the MBS they had sold to investors, meaning that they would have to pay back the investors in case the investments went bad because of mortgage defaults. This is what happened in 2007 and 2008 when housing prices began to drop and many, especially subprime borrowers, defaulted on their mortgages. In August 2008 Fannie Mae and Freddie Mac held or guaranteed about $5.2 trillion of U.S. mortgage debt (Frame et al., 2015). Investors who were concerned with falling house prices started to sell their shares in the two companies. As a result the total value of Fannie Mae’s shares dropped from $38.9 billion at the end 2007 to $7.6 billion at the end of August 2008, and the total value of Freddie Mac’s shares dropped from $22 billion to $3.3 billion in the same period (PRMIA, 2011). The falling share price of Fannie Mae and Freddie Mac indicated that the market had lost faith with the two mortgage giants, and less than a month later the U.S. government placed them under conservatorship.

The consequences of financial deregulation

The economic thinking behind the deregulation of financial markets assumes that the financial industry serves the needs of the overall economy and increases its efficiency, if it is allowed to function in a free market, compliant with Friedman’s ideology. According to this way of thinking the financial markets operate best in an environment of minimum regulation because regulation distorts the system (Orhangazi, 2014). It is believed that in an unregulated financial market, the actors within it will act in their own interest which will create efficient outcomes for the overall economy. Looking at the financial crisis of 2008 it is clear that the actors in the financial market did indeed act in their own interest, but if it created an efficient outcome for the general economy is highly debatable. According to the theory the efficient outcome would have been to allow the unhealthy companies to fail in order for the economy to get better. This, however,
would have created unprecedented financial problems for the U.S. economy as a whole, and it can thus hardly be argued that it would have resulted in an efficient outcome for the overall economy.

The deregulation era of 1980 up to the financial crisis encouraged higher levels of leverage and risk in the financial system as the competitive nature of the financial sector incentivized excessive risk-taking in order to maintain market shares and profitability (Orhangazi, 2014). This was evident as capital requirements for banks kept being lowered by the government (i.e. the SEC rule that “unlimited” leverage for the five big investment). The high levels of leverage by financial firms became a huge problem during the crisis. Leverage is the use of credit to fund your investments, and the increased use of leverage allowed banks to follow capitalist ideologies of maximizing their profits by increasing their use of leverage even further. For example, through a use of a 1:10 leverage an investor can buy assets worth $100 million by providing $10 million himself and borrow the remaining $90 million. In this example, the investor is only allowed to leverage his position up to 1:10. If the value of his assets drops to 95 million, giving him a loss of $5 million, he will have lost half of the initial $10 million he invested. Because he is limited through capital requirements to a 1:10 leverage he can now only hold assets worth $50 million as he is now only able to provide $5 million. He is thus forced to deleverage his position and sell assets worth of $45 million to lower the original position, so his position does not exceed the 1:10 capital requirement (Brunnermeier, 2008). When multiple investors have to deleverage their position simultaneously flooding the market, as was the case during the crisis, it drives the price of assets down further due to the law of supply and demand. This, in turn, can cause investors holding similar assets to deleverage their position too as the value of their assets has decreased. This creates a negative downward spiral for the price of these assets.

During the crisis the levels of leverage used by the big banks were much higher than 1:10, and as described earlier five investment banks were given “unlimited” leverage by the SEC in 2004. This, for instance, meant that the investment bank Bear Stearns
increased its leverage to 1:33\textsuperscript{11} (Labaton, 2008). Bear Stearns’s use of 33 to 1 leverage meant that they provided 1 dollar for every 33 dollars they invested, the rest was borrowed money. As a result every time Bear Stearns would have earned $1 they instead earned $33 due to their use of 1:33 leverage. However, this also meant that if they lost $1, they would, in reality, lose $33, exposing the bank to huge risk, as as little as a 3% drop in their assets value could cause the bank to fail. The levels Bear Stearn pushed their leverage to is, however, one of the more extreme cases, as banks that were not given “unlimited” leverage by the SEC could only use a 1:12 leverage ratio (Denning, 2011).

The increasing amounts of corporate leverage can be seen in figure 5 which shows the level of outstanding debt for the financial sector as a percentage of GDP. It is clear from the figure that from the 1980s and forward the level of debt in the financial sector increased significantly and in the 2000s the level of debt was higher than the total GDP topping at 120 percent in 2007.

Figure 5

**Financial Sector Credit Market Debt Outstanding % of GDP**

\begin{center}
![Image of graph]
\end{center}

Source: Nersisyan & Randall Wray, 2010

\textsuperscript{11} Bear Stearns level of leverage varies depending on sources, and other sources argue that they went as high as 1:40 (Dhuddu, 2008)
Another element that was fueled by deregulation in addition to corporate risk-taking was the compensation structure of employees in financial firms. The way financial workers were compensated also created incentives for increased risk-taking without thinking of the long-term risks. For example, subprime mortgage loan officers were paid large commissions when they brought in new customers but did not have to pay it back when the mortgages went bad (Pollin, 2008). This is a classic example of moral hazard. Because loan officers knew that their commissions were based on the profits they generated for the company; they would have an incentive to take on larger risk in order to maximize profits as this would result in a larger commission. The fact that the company would be responsible for the risk and take the potential loss, created a situation where the loan officer could flip a coin, heads he wins, tails the company loses. Furthermore, in 2014, a report by the International Monetary Fund (IMF) found that the compensation structure in the financial sector encourages bankers to take short-term risks neglecting the longer-term risks because they most likely will have moved on when the risks materialize (Cohan, 2014).

One of the financial innovations facilitated by the lack of regulation is the process of securitization where mortgages are bundled together and sold to investors. The securities backed by subprime mortgages were one of the main reasons that many financial institutions almost collapsed. Partly due to deregulation the firms failed to comprehend and disclose the risks involved, credit rating agencies failed to assess the complex securities properly and ultimately investors failed to investigate them thoroughly enough (Orhangazi, 2014). The securities market is one of the elements that made financial institutions so interconnected, which is why the whole financial system was at risk. The period of deregulation in the U.S., inspired by the free market ideologies of Friedman, is thus what jeopardized the whole financial system. The interconnections in the securities market will be explained in greater detail later in the paper.

Besides creating an interconnected system, financial deregulation also created a market with only a few but very large too-big-to-fail institutions which, combined with the interconnectedness of the sector, made the financial system more vulnerable to individual bank failures. That deregulation decreased the number of banks as well as making the existing banks bigger is evident in figures 6 and 7. Figure 6 shows the
number of banks from 1934 to 2008. From 1934 to the late 1980s the number of banks is fairly stable at around 14,000. From 1990 to 2008 the number of banks in America dropped almost 50 percent to about 7,000 (Nersisyan & Randall Wray, 2010). This development is for instance due to the Riegle-Neal Interstate Banking and Branching Efficiency Act that allowed interstate bank mergers and acquisitions.

Figure 6

**Number of Banks in the U.S. 1934-2008**

![Figure 6](image)

Source: Nersisyan & Randall Wray, 2010

Figure 7 shows the total assets held by the 18 biggest banks as a percentage of total assets in the financial sector. Figure 7 gives a good indication of the size of the financial institutions. In 1992 the largest 18 banks held a little over 20 percent of the total assets. In 2008, the number had increased to more than 60 percent of total assets in the financial sector. Furthermore, in 2008, the four biggest banks held 40 percent of total assets compared to a little over 20 percent in 1992 (Nersisyan & Randall Wray, 2010). This shows that the biggest banks became even bigger in the years leading up to the financial crisis increasing the issue of too-big-to-fail. This turned out to be a problem in 2008 as the larger concentration of interconnected too-big-to-fail banks created a dilemma for the U.S. government of either bailing these large interconnected banks out or letting them fail. The increasing number of too-big-to-fail banks meant that the U.S. government had
to judge the systemic importance of more banks, and commit a larger portion of funds for the bailouts found necessary for the greater good of the economy.

Figure 7

**Total Assets and Deposits Held by Top 18 Banks (% of total)**

![Bar chart showing total assets and deposits held by top 18 banks from 1992 to 2009.](chart)

Source: Nersisyan & Randall Wray, 2010

*As of June 30, 2009

Earlier it was mentioned that after the passing of the Commodity Futures Modernization Act the actors in the OTC derivatives market were pretty much left to regulate themselves, which is also part of the reasoning behind financial deregulation. This meant that the companies in the market handled risk assessments of the various derivatives they were dealing with. Orhangazi (2014) argues that this led to an underestimation of the real risks involved with these derivatives, which made it difficult to determine the differences between poor judgment and fraudulent behavior. The Friedman-inspired economic ideology of the time believed that government intervention was counter-productive because bankers know a lot more about the financial products they deal with than government regulators that do not have any, or at least not as much, experience in banking or finance (Orhangazi, 2014). Furthermore, the belief was that
decision makers in the financial market would not make decisions that would be counter-productive to their own interests and thus create instability in the financial market. The evidence from the 2008 crisis paints a different picture. The unchecked self-regulation of financial institutions led to financial practices, such as high levels of leverage, that were anything but productive – neither for the companies themselves or the overall economy (Orhangazi, 2014). This shows that the government’s use of Friedman’s ideology was flawed in this area.

The need for short-term gain causes decision makers in the financial institutions to ignore the long-term risks that include financial fragility and systemic risk. They ignore them because the complexity of the risks can make it look like they will not be affected by them (Tymoigne, 2009). To counter the anti-government intervention argument, Tymoigne (2009) argues that central bankers and economists are not dumb people who know nothing about banking and finance. They may not know how to run a profitable banking business, but their knowledge concerns systemic risks. He further argues that regulation since the 1980s, or lack thereof, has been based in ideology and satisfying business interests, in spite of thorough academic analyses of the systemic risks suggesting different financial regulation (Tymoigne, 2009). That central bankers, government regulators, and economists are not dumb is, of course, true. However, they are probably less likely to understand the deep effects of complex financial innovations than the “rocket scientist” bankers that actually created them. A consequence being that regulators, at least, will be influenced not to regulate them when these bankers argue that they are safe, much like in the case of Brooksley Born and the OTC derivatives market in the 1990s. This disadvantage is difficult to change as financial institutions are able to pay their employees much better than government agencies and as a result the top financial talents go to the banks. Furthermore, many of the government regulators often come from or are on their way to the financial industry, which to some extent undermines the autonomy of regulators from the industry, they are supposed to regulate (McCarty et al., 2010).

All in all, it is clear that deregulation from the 1980s and forward created a foundation for a bubble to form and thus for a crisis to occur. In the decades leading up to
the financial crisis in 2008 the United States Congress, with support from various presidents, enacted several laws that loosened regulation and restrictions on the financial sector. These laws caused financial institutions to innovate new complex financial products that were difficult even for them to understand, such as CDS and CDOs. In an unregulated market, these innovations were a “recipe for disaster” and they played a big part in the collapse of some financial institutions. On top of the looser regulation on the financial industry, the government also pushed for homeownership to all Americans, which meant that mortgages were given to households that normally would not qualify for a home mortgage. The low interest rates provided by the Fed and the government push for homeownership played a huge role in forming the housing bubble, which eventually burst and almost caused the financial system to collapse. This can be seen as government interventions in the market through artificially low interest rates, something that Hayek has criticised for creating an artificial market that is hard to interpret for businesses. The collapse is much in line with Hayek’s prediction that companies would not understand how the artificial market is created. Furthermore, deregulation led to a decrease in the number of banks and thus an increase in the size of banks, which made them more systemically important increasing their chance of being deemed too-big-to-fail. This section has shown that deregulation and government policy since the 1980s combined created a foundation from where financial institutions could prosper and develop new financial innovations traded in the shadow banking system.
The financial system that developed from the foundation of deregulation

In our above analysis of deregulation and government policies since the 1980s, we established that the two combined created a foundation from where shadow banking could emerge, and at the same time created an incentive for financial institutions to take greater risk due to moral hazard. This section shows how financial institutions used this foundation of deregulation starting in the 1980s to develop the so-called shadow banking system, as well as how it affected the financial crisis. The section is divided into three different subjects, shadow banking, credit rating agencies and derivatives, which we consider to have played a role in the financial crisis. After explaining the three individually and showing how they developed and what their role was, a fourth section will follow where the three subjects are connected to explain how they contributed to the financial crisis.

The shadow banking system

In order to understand the problems that happened in the financial system during the crisis a comparison of the traditional banking system and shadow banking system is made. After presenting the differences, the emergence of shadow banking is presented and connected to government programs and financial deregulation. We look at how the creation of the GSE’s Fannie Mae and Freddie Mac created a secondary market for mortgages, that inspired banks to further develop this market to pool other loans into complex derivatives. We continue by explaining how dominant and important shadow banking has become and why the fragility of the system is part of the reason that the financial crisis was as severe as it was.

The financial crisis was in many ways a modern run on banks\(^{12}\), which caused the financial markets to freeze up. The lack of liquidity in the markets caused big Wall Street banks to have problems funding their day-to-day operations as they depended on short-

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\(^{12}\) Run on banks is when depositors simultaneously withdraw their funds causing the bank to run out of funds and fail.
term lending. The problem during the financial crisis was that it was not the traditional banks, which had access to the Fed’s discount lending window that got into trouble. It was, however, the specialized financial institutions often referred to as shadow banks. In order to understand how the financial crisis ripped through the financial markets it is thus necessary to first look at what shadow banking is, and how it differs from traditional banking before looking into the specific instruments and the interconnections that caused the crisis.

The traditional banking system is where banks that receive deposits from savers, keep a certain amount in reserve and lend out the rest to borrowers (Noeth, 2012). The difference between what the bank charges in interest to its borrowers and what it pays in interest to the savers is their profit. It is, however, important to understand that traditional banking and shadow banking have become interconnected over the years. In the aftermath of the stock market crash in 1929, the government, using Keynesian macroeconomic theory, set up a safety net under the banking system to put a stop to all the bank runs that had happened in the past. There is data suggesting that the creation of the Fed as a lender of last resort in 1913 partly fixed the problem, but it was not until the FDIC was created under the Glass-Steagall Act and federal deposit insurance was introduced, that bank runs on the traditional banks ended (Pozsar, Adrian, Ashcraft, Boesky, 2010). As mentioned earlier, to have access to the safeguards of the Fed such as the discount window, the traditional banks are subjected to certain regulations, for example, reserve requirements which shadow banks are not.

The traditional banking system is in theory fairly simple, where the shadow banking system is very complex because it consists of many more steps than the traditional one. There is no single clear definition of what a shadow bank is. However, a broad definition made by the Financial Stability Board (FSB) states that shadow banks are “all entities outside the regulated banking system that perform the core banking function, credit intermediation (that is, taking money from savers and lending it to borrowers)” (Kodres, 2013). The definition more or less resembles the definition of a

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13 The term shadow banking was first used by economist Paul McCulley in 2007 (Kodres, 2013)
14 Banks are legally required to keep a portion of its deposits in reserve. The amount is calculated based on how big risk the bank takes (Noeth, 2012)
traditional bank, because shadow banks do perform the same function as traditional banks, channeling funds from lenders to borrowers. However, there are a couple of differences between the two. One difference between the two is the way shadow banks are funded. The shadow banking system does not receive its funding from deposits as the traditional banking system does. Instead, it raises its funds from the money markets which for instance could be a Money Market Mutual Fund (MMMF). MMMF’s are investment funds that only invest in high quality short maturity bonds, bank deposits, and repo agreements, and they receive their funding from households as well as institutional investors\(^\text{15}\) (Noeth, 2012). Another difference is that the loans issued in the shadow banking system are sold to other financial institutions who pool the loans with other loans (securitize) creating complex financial instruments such as mortgage-backed securities (MBS), and collateralized debt obligations (CDO) also known as derivatives. The structure of the important derivatives will be explained in details later in the paper.

The pooling of loans by shadow banks was considered a way to transform loans into a “seemingly credit-risk free, short-term money-like instrument” (Pozsar et al., 2010), partly because the law of numbers kick in, and multiple loans had to default before low-risk-taking investors would lose money on their investment. The securitization process can consist of several different steps as the number of steps each loan goes through depends on the quality of the initial loan, as well as the risk profile of the investors. The higher quality loans might only need to go through a few steps before they meet the investors’ risk profile, where lower quality loans such as subprime mortgages might need to go through multiple steps before they match investors’ profile (Pozsar et al., 2010). These financial instruments created by the shadow banking system are then sold to investors who receive interest on their investment, based on their risk profile.

There are different views on how and why the shadow banking industry emerged. Scholars such as Pozsar et al. (2010) argue that the birth of shadow banking can be traced back to the creation of government-sponsored enterprises (GSE) Fannie Mae and Freddie

\(^\text{15}\) Repo is a repurchase agreement. “In a repurchase agreement an entity in need of funds sells a security to raise those funds and promises to buy the security back (that is, repay the borrowing) at a specified price on a specified date.” (Kodres, 2013)

\(^\text{16}\) This is why they are threatened by bank runs because Repo or MMMF’s can withdraw their money.
Mac and the FHLB system\textsuperscript{17} (1932), which supports our argument that government policies created the foundation for the financial crisis. According to Pozsar et al. (2010) Fannie Mae and Freddie Mac created the foundation for the originate-to-distribute model, a model where loans are issued with the intention of selling them to other institutions. This model increased moral hazard and largely replaced the originate-to-hold model where banks would hold the loans to their maturity, which was explained earlier in the paper. This is also one of the reasons why mortgage originators increased risk-taking and loosened their lending standards, as they would sell the mortgages on, and thus not be affected by eventual losses. Additionally, the FHLB system was the first to provide a line of credit to mortgage lenders, to fund mortgages until the loans could be sold in the secondary market which is also known as warehouse lending (Investing Answers, n.d.).

The GSE’s received their funding from the money markets institutions such as MMMF’s much like shadow banks do today. The processes created by the GSE’s to help make the mortgage market more liquid, inspired banks and shadow banks and has since the early 1980s been adopted and further developed to involve all types of loans creating complex derivatives and the shadow banking system we know today.

Another argument presented by Yale economist Gary B. Gorton (2010), states that shadow banking emerged because the traditional banking system became unprofitable in the 1980s. As described earlier, it was among other things the provisions of the Glass-Steagall Act that kept traditional banks from being competitive. The fact that shadow banks were not subjected to any, or at least very few regulations, made them competitive compared to traditional banks. This is often argued to be one of the reasons that the shadow bank system has grown as much as it has since the 1980s (Gorton, 2010).

Furthermore, the increased competition from MMMF’s, who gained a reputation as safe and profitable alternatives to bank deposits also took market shares from the traditional banks. The U.S. MMMF’s sought to maintain their shares at a constant price of one dollar, ensuring investors that they would be able to sell their shares for the same one dollar price as they had paid for it. MMMF’s were thus set up to mimic traditional bank deposits, allowing investors to withdraw funds on a daily basis while at the same

\textsuperscript{17} The Federal Home Loan Bank system – Its public mission since 1989 has been to include affordable housing and community development lending (U.S. Department of Housing & Urban Development, n.d.b)
time receiving interest on their investments (Mai, 2015). Pozsar et al. (2010) agree that there was an increased competition from non-bank entities, such as MMMF’s, in the 1980s. Furthermore, they argue that this caused banks to transform from the “traditional process of hold-to-maturity, spread-banking to a more profitable process of originate-to-distribute, fee-banking”. The search for higher returns led banks to acquire the specialized non-banking entities that threatened their profit margin, and when the Financial Services Modernization Act, which repealed the Glass-Steagall Act, was signed into law in 1999, traditional banks and investment banks were allowed to merge, and form large Financial Holding Companies (FHC) that were allowed to engage in all financial services under one roof.

Because shadow banks are not subjected to the same regulations as traditional banks, they do not have access to any safeguards from the Fed, and they are not covered by the FDIC. This has made the shadow bank system very fragile in terms of bank runs (Noeth, 2012), which is what we saw during the financial crisis. Bank runs can thus be connected to herd behavior as investors influence each other. Investors who might not have considered withdrawing their money could see investors who withdrew their funds as having more information than themselves. These investors might change their original perception and withdraw their funds too as it would be considered the safe option to follow the herd.

The problem with the fragility of the shadow banking system is that it over the years has become significantly larger than the traditional banking system as illustrated in Figure 8 (De Rezende, 2011). The shadow banking industry is responsible for financing more than half of all the loans issued in the U.S. economy, and according to Gorton (2009) serves an important role in the financial markets, and should be protected. If the supply of loans drops by half because financial institutions in the shadow banking industry disappear from the market, the price of loans will increase dramatically making it much more expensive for private households and financial institutions to fund everyday transactions. This would threaten the entire economy as there would be a lack of supply of credit (Pozsar et al., 2010).
Shadow Bank vs. Traditional Bank Liabilities

![Graph showing the comparison between shadow bank and traditional bank liabilities from 1952 to 2007.]

Source: Noeth & Sengupta, 2011

It is clear from the figure that the shadow banking system began to grow significantly in the 1980s. This coincides with the U.S. government beginning to follow Friedman-inspired free market ideologies that promoted deregulation of the economy. Furthermore, it was in this period that governments introduced programs to increase homeownership. The shadow banking system known today was thus built on a foundation of deregulation and government policies that aimed at increasing homeownership. During the 1980s, traditional banks became less competitive, partly because MMMF’s were considered good and safe alternatives to traditional bank deposits. Other government policies such as the creation of Fannie Mae and Freddie Mac also had an influence on the emergence of shadow banking, as these GSE’s changed the nature of the mortgage market. The shadow banking industry grew larger than the traditional banking system and financed more than half of all loans in the U.S. economy. This makes them a very important player in financing everyday consumption for both households, and companies. Furthermore, the repeal of the Glass-Steagall Act allowed banks to form FHCs that could have both traditional and shadow bank divisions under one roof. The large FHC created incentives for increased risk-taking as they became more likely to be deemed too-big-to-fail, which increased the issue of moral hazard.
Credit rating agencies

Before looking at the different types of derivatives issued and securitized by the shadow banking system, many of which became toxic assets\(^{18}\) during the crisis, the role of credit rating agencies and how they influenced the financial crisis will be explained. After the financial crisis, credit rating agencies have been heavily criticized, mainly for exaggerating ratings of derivatives. The exaggerations of ratings have been argued to be the result of two key elements. The first one being government regulations that created a market form that limits competition, and the second one being the credit rating agencies’ business model which has been argued to incentivize over-valuing of derivatives. These elements, as well as a brief description of the role of credit rating agencies, will be elaborated in the following section.

Credit rating agencies stand on the sideline of the financial system; however, they play a very important role. They are on the sideline because they are not part of the financial transactions, and they do not buy bonds and securities. However, they play an important role in indicating to investors how safe or risky a bond or bond issuer is and the likelihood that the investors will get a safe return on their investment (Shorter & Seitzinger, 2009). There are three major credit rating agencies in the United States: Moody’s, Standard & Poor’s (S&P) and Fitch who together control close to 95 percent of the market.\(^{19}\) The different rating agencies use different scales; however, the best-known scale is the one used by S&P ranging from AAA\(^{20}\), the best rating, to D which is the worst rating (Smith, n.d.). The credit ratings assigned to companies and bonds allow investors to judge how risky it will be to invest in different assets.

However, credit ratings have much more power than just stating how safe or risky specific assets are, as they indirectly can limit or increase the market and the number of buyers for specific assets. This is partly because the U.S. government has regulated the bond market since the 1930’s and partly because the SEC through regulations has granted

\(^{18}\) When an asset that used to be liquid becomes illiquid because the secondary market disappears. (Investopedia, n.d.c)

\(^{19}\) Moody’s 40 %, S&P 40% and Fitch 15% based on revenues or issues rated (Council on Foreign Relations, 2015)

\(^{20}\) AAA, AA, A, BBB, BB, B etc.
a few firms what can be considered an advantage as they are the only ones legally allowed to evaluate certain bonds. These regulations will be explained next.

One of the regulations imposed on the bond market by the U.S. government\(^{21}\) in 1936 states that thrift institutions\(^{22}\), would not be allowed to invest in speculative securities, which would be any bond rated BB or lower on the S&P scale. In the decades following insurance companies and pension funds were likewise regulated, meaning there was a group of investors who could only invest in investment grade bonds of BBB or higher. Whether a bond was above or below investment grade was to be judged by the credit rating agencies that used officially recognized rating manuals such as Moody’s, S&P and Fitch. This ultimately forced thrift institutions to pay attention to these companies’ ratings (White, 2009).

In 1975, the SEC further regulated the industry by modifying how much capital broker-dealers\(^{23}\) had to hold against their portfolios of securities. Fearing that the definition of recognized rating manuals was too vague to prevent phony rating agencies from over-valuing bonds and companies, the SEC decided to create a new category called the Nationally Recognized Statistical Rating Organization (NRSRO) (White, 2010). The SEC determined that the three major credit rating agencies would be considered to fall under the NRSRO category as their ratings were used nationwide already. The SEC has added more credit rating agencies to the NRSROs over the years; however, the big three maintain their dominant position. The lack of growth in the number of NRSROs over the years is mainly argued to be because the SEC never defined what it required of other credit rating agencies to become an NRSRO. This, however, changed in 2006 with the Credit Rating Agency Reform Act of 2006, where a section specifically stated what defined an NRSRO. The three main credit rating agencies were officially registered under the new NRSRO system in September 2007, and two years later seven new credit rating agencies were added to the list (Shorter & Seitzinger, 2009).

\(^{21}\) The office of the comptroller of the currency, an independent bureau within the U.S. Treasury (Office of the Comptroller of the Currency, n.d.)

\(^{22}\) Thrift institutions collect most of their deposits from consumers such as savings and loan associations, savings banks, and credit unions (AllBusiness, n.d.)

\(^{23}\) Including investment banks, and securities firms
In practice, the regulations made by the SEC throughout the years created an oligopoly. White (2010) argues that the creation of the NRSRO by the SEC created a barrier of entry, into the credit rating market and thus a lack of competition. The lack of competition due to the SEC regulations is why Berkshire Hathaway run by Warren Buffett had bought a 20 percent stake in Moody’s in 2008. Buffett argued that they had invested in Moody’s because “the rating agency business was “a natural duopoly” which gave it “incredible” pricing power - and “the single-most important decision in evaluating a business is pricing power.” The market situation ultimately forced investors and banks to get their securities rated by the three major credit rating agencies as they were the only ones who fulfilled the regulatory rules set up by the SEC. The lack of competition within the credit rating market can be said to have created a complacency among the companies as they were not under pressure from new competitors.

The business model of credit rating agencies has changed over time. Up until the 1970s, the most common way for rating agencies to make money was to make the investors pay for the ratings known as the subscriber-pays model. In the early 1970s, the three main credit rating agencies changed their business model, from the subscriber-pays, to an issuer-pays model. The issuer-pays model is where the issuer of a bond or security pays for the ratings, and the ratings are then offered free of charge to the public (Shorter & Seitzinger, 2009).

The issuer-pays model used by the three main credit rating agencies has been heavily criticized during and after the financial crisis, due to the number of bonds that were downgraded during and after the crisis. Critics such as White (2010) and Shorter and Seitzinger (2009) argue that the issuer-pays model created an incentive for credit rating agencies to give bonds a better rating in order to keep the investment banks as clients. This argument is partly based on the fact that the credit rating agencies’ client bases of investment banks that securitized huge volumes were limited. The importance of having these as clients was thus very significant as investment banks that were not satisfied with the ratings made by one credit rating agency could move its business to one of the others (White, 2010). This would not only result in large losses of revenue but at the same time grant additional revenue to one of its two competitors.
Credit rating agencies using the issuer-pays model, however, argue that this criticism is unjustified as reputation is a very important aspect of the credit rating industry and that they will lose their integrity with both issuers and investors if they deliberately grant bonds higher ratings. They further argue that committees and not individuals assign the ratings and that they do not compensate their analyst based on the revenues of the entities they rate (Shorter & Seitzinger, 2009).

Despite S&P, Moody’s, and Fitch all arguing that there was no conflict of interest, the SEC presented findings in July 2008 stating “there appeared to be instances in which the credit rating agencies considered adjusting their ratings criteria to make them more competitive” (Shorter & Seitzinger, 2009). The SEC’s findings can be backed up with the data available for how many AAA rated bonds that were downgraded. A 2009 IMF report shows that on June 30th, 2009 90% of the AAA-rated CDOs rated by S&P between 2005 and 2007 were downgraded and that 63% of the AAA-rated MBS issued in the same period also were downgraded (IMF, 2009). Based on this data it is possible to argue that the credit rating agencies actually did exaggerate their ratings possibly to keep large investment banks as clients.

However, despite this, the credit ratings that the financial system relies so heavily on are ultimately just the agencies’ opinions. For example, on all their ratings S&P has a disclaimer: “[A]ny user of the information contained herein should not rely on any credit rating or other opinion contained herein in any investment decision.” (White, 2010).

Furthermore, Shorter & Seitzinger (2009) present evidence that credit rating agencies in the past have been considered to be under the partial protection of the First Amendment. A federal district court has found that credit rating reports were protected by the First Amendment based on a Supreme Court ruling stating, “the expression of opinion about a commercial product such as a loudspeaker is protected by the First Amendment.” The Supreme Court has, however, stated that “publishers are not entitled to automatic protection under the First Amendment for general violations of the law,” meaning that credit rating agencies can be liable for their opinions if they are considered to deliberately provide false information (Shorter & Seitzinger, 2009).

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24 “Congress shall make no law …abridging the freedom of speech, or of the press…” (National Constitution Center, n.d.)
The SEC regulations ultimately forced bond issuers to get their bonds etc. rated by NRSRO credit rating agencies that provide a service that is required for the market to function. The fact that they provide a mandatory service while on the other hand found protection under the First Amendment as they merely provide opinions makes the credit rating market an industry where there is practically nothing on the line for the companies. If the ratings turned out to be exaggerated as was the case in many instances during the financial crisis it would be difficult for the companies to hold credit rating agencies reliable unless it could be proved to be a deliberate action. This is partly because investors are expected to do their own due diligence and not solely rely on the ratings provided by the credit rating agencies. The exaggerated ratings are part of the reason that the financial market was flooded with toxic assets, mainly derivatives, and jeopardized the health of several financial institutions. The use of derivatives and how they work will be explained in the following section.

The derivative market

The OTC derivatives market is often mentioned as a cause of the financial crisis, due to its size, complexity and the fact that it is not regulated (National Association of Pension Funds, 2013). However, derivatives are not necessarily bad for the economy. Whether or not derivatives are unhealthy, for the individual or the overall economy, depends on how they are used. A lack of common sense can lead to an exaggerated use of derivatives which can threaten the health of a company if the risk is not balanced. In this section, we explain the positive side of derivatives first. We give two examples of how derivatives can be used in an unproblematic way in the form of futures and options, both

In the wake of the crisis the big three credit rating agencies have been investigated for their role in the financial crisis. In 2008, New York Attorney General Andrew Cuomo reached a settlement with the big three agencies. The result of the settlement made the big three agencies implement a number of reforms that sought to deal with some of the areas they were criticised for during the crisis (i.e. the agencies will disclose results of all the securities they rate, even if the issuer chooses to go with another agency’s rating. This allows investors to be able to see if the issuer chose a higher rating from another credit rating agency (Shorter & Seitzinger, 2009). Besides the settlement from 2008 S&P has also been involved in several legal actions for their role in the financial crisis. As a result S&P has settled multiple legal actions, the largest being a $1.375 billion settlement with the Department of Justice, 19 states and the District of Columbia where they were accused with deliberately defrauding investors through their valuations of MBS and CDOs (Department of Justice, 2015).
of which are exchange traded derivatives. Furthermore, we give an example of interest rate swaps, which are OTC traded, but not blamed for causing the financial crisis. We present examples of how derivatives can be used without causing problems for the economy to show that the reason derivatives created problems during the financial crisis was because they were used in an excessive way. The problematic derivatives that almost collapsed the economy will be explained afterward to show how financial innovation created a profitable business that was considered to be safe due to securitization.

A derivative is in its most basic form a contract that derives its value from an underlying asset, such as bonds, credit, commodities, etc. (Funk & Hirschman, 2014). Derivatives can either be traded on an exchange, where it is subjected to standard rules and regulations, or over-the-counter (OTC26), where it is completely unregulated as it is a private agreement between two parties. The OTC market is the bigger of the two with 80 percent of all derivatives being OTC in 2008 (Crotty, 2008).

The most common types of derivatives are futures/forwards27, options, and swaps. Futures and forwards resemble each other structurally; however, the main difference is that futures are traded on exchanges, where forwards are OTCs. A future derivative is where two parties make a contract to deliver an asset at a specific time in the future at a price agreed on today. To give an example, imagine that a store needs 100 pumpkins to sell in its shop for Thanksgiving. The store owner can contact a pumpkin farmer and sign a future derivative contract. By doing so, he is buying and paying for the 100 pumpkins right away in, say, April, but does not collect his pumpkins until November when he needs them. In the contract the two parties agree on the price for the pumpkins usually based upon today’s price, for instance, $1 apiece, totaling $100 for all the pumpkins. The store owner pays the farmer $100, and in return the farmer hands him a contract promising him that he can collect his 100 pumpkins in November.

By creating a future derivative contract both the farmer and the store owner bets on the price of pumpkins changing. The store owner bets that the price will increase and the pumpkin farmer bets that the price will decrease. Thus, both of them think that they

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26 A private agreement between two parties, who upon entering into the contract agree on the terms and conditions
27 The structures resemble each other and are thus mentioned as one for simplicity reasons.
are left with the best deal. If the price of pumpkins has decreased when the store owner wants to collect his pumpkins in November to 75 cents apiece he will lose money on the deal as he paid $1 apiece when the contract was signed. The farmer, on the other hand, will earn more than market value on his pumpkins as he was paid $1 apiece when the contract was signed.

An option is somewhat similar to futures. It is a contract stating that one party has the right, but is not obligated to buy or sell something in the future. This type of contract means that the buyer of the contract can walk away if he does not wish to fulfill the contract. An option requires the buyer to pay a premium to the seller in order to obtain the right to the option. If we use the same example as above, the store owner can instead of buying the 100 pumpkins in advance, buy an option granting him the right to buy the pumpkins at $1 apiece, totaling $100. The farmer will charge him a premium to enter such a contract; let’s say $5. When the store owner needs his pumpkins in November, he notices that the price is now 75 cents a piece thus giving him the possibility of buying the pumpkins for $75 in the open market, instead of the $100 his option contract with the farmer states. He decides to walk away from his option contract, as this would grant him the smallest loss. By doing so, he only loses the $5 he paid for the option contract instead of the $25 extra he would have had to pay for the pumpkins if he decided to fulfill the contract.

The two types of derivatives explained above are typically exchanged-traded derivatives while the next type of derivatives called swaps, mainly is OTC traded (Sjostrum Jr., 2009). Swaps are an agreement to exchange one type of cash flow for another in the future (i.e. interest rates, currency or credit). It is especially the credit default swaps that are often argued to be one of the causes of the financial crisis. However, swaps such as interest rate swaps can serve a positive purpose. During the financial crisis the majority of derivatives were interest rate swaps (Nersisyian & Randall Wray, 2010), which have never been blamed for causing the financial crisis, and are considered relatively safe (Funk & Hirschman, 2014). An interest rate swap is an agreement between two parties where for example one has a fixed interest rate, party A
who pays 7%, and one has a variable rate, party B, who pays LIBOR\textsuperscript{28} + 2%. Depending on LIBOR the variable interest rate can be cheaper or more expensive than the fixed interest rate. If LIBOR is 4% one month, party B will pay LIBOR 4% + 2% = 6% in interest while party A still pays his fixed rate of 7%. As long as LIBOR stays low, party B will have the best deal. However, if LIBOR increases to 8% his interest rate will be LIBOR 8% + 2% = 10% interest. Now party A, who has a fixed rate of 7%, will have the best deal due to the increase in the LIBOR rate. Fluctuations in the LIBOR rate thus define whether party A or party B pays the lowest interest each period.

An interest rate swap deal can take place if two parties wish to change their interest rate from a fixed or variable rate to the opposite. Party A might wish to change to a variable interest rate because he expects the LIBOR rate to stay low thus making him willing to take on the risk of a variable interest rate in order to have a lower payment each period. Party B, on the other hand, might wish to change to a fixed rate, as he is nervous that the LIBOR rate might increase, and he is not willing to carry the risk of a variable rate (Funk & Hirschman, 2014). Party A and B can then make an interest rate swap deal stating that party B is going to pay a fixed 6% on a notional\textsuperscript{29} to A. In return A is going to pay LIBOR + 1% to B each period. Engaging in such a deal A and B will still pay the interest rate on their own loans; however, their swap deal results in A now paying a variable rate and B paying a fixed rate.

A simple illustration of the interest payments for the two parties is illustrated in Table 1. The top part of the table shows the monthly payments for each party to the lender and the bottom part of the table shows the monthly payments they make to each other in the same period through their swap deal.

\begin{footnotesize}
\footnote{LIBOR – London Interbank Offered Rate the most widely used benchmark for short-term interest rates (Investopedia, n.d.a)}
\footnote{The theoretical value of an asset, meaning that the two parties do not exchange the loan amount only the interest rate (Financial Times Lexicon, n.d.)}
\end{footnotesize}
Table 1

Example of interest rate swap

<table>
<thead>
<tr>
<th>Original loan</th>
<th>A (fixed 7%)</th>
<th>B (LIBOR +2%)</th>
<th>LIBOR rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period 1</td>
<td>7%</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Period 2</td>
<td>7%</td>
<td>9%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Swap deal

<table>
<thead>
<tr>
<th></th>
<th>A (LIBOR +1%)</th>
<th>B (Fixed 6%)</th>
<th>LIBOR rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period 1</td>
<td>5%</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Period 2</td>
<td>8%</td>
<td>6%</td>
<td>7%</td>
</tr>
</tbody>
</table>

The calculation of the swap looks as follows. For period 1, A will pay its fixed rate of 7% to the lender, and 5% to B while at the same time receiving 6% in interest from B as agreed in the swap deal. A’s interest payment will thus be 7%+5%-6% = 6% in interest. The same method is used for B, who is going to pay 6% to the lender, and 6% to A while at the same time receiving 5% in interest from A. B’s interest payment will thus be 6%+6%-5% = 7% in interest. To further illustrate how the swap deal works, interest rate period 2 is explained too, where the LIBOR rate has changed from 4% to 7%. A is still paying its fixed rate of 7% to its lender; however, because of the increase in the LIBOR rating A is now paying 8% to B while still receiving 6%. A’s interest payments for period 2 will thus be 7%+8%-6% = 9%. B, on the other hand, is going to pay 9% to the lender due to the increase in the LIBOR rate but is still paying the fixed rate of 6% to A, while receiving 8%. As a result B’s interest payments for period 2 is 9%+6%-8% = 7%. This example shows how the two have directly swapped interest payments, and, in theory, are paying each other’s interest.

Even though derivatives are often mentioned as a cause of the financial crisis, it is important to understand that derivatives, or, at least, some of them, can be a beneficial part of the financial system. The derivatives described above, together with the examples, showed some of the benefits of derivatives. The farmer and the store owner knew the price of the pumpkins through their futures/forward contract or if they signed an option contract. This allowed them to remove some of the risks of market fluctuations, which gives them some security in planning their business. Furthermore, it gives one of the two
the possibility to earn more than usual if the price goes in his favor in relation to the derivative contract. The interest rate swap example shows how two parties can choose to swap their interest rates if they believe it will be beneficial for either of them.

The downsides of the derivative contracts are that there always will be one party that loses on the contract (Duffie, n.d.). If the price of pumpkins increases to $1.25 apiece, the farmer will lose money on the derivative contract as he could have sold the pumpkins for more than the agreed price in the contract of $1 apiece. Who “wins” in the interest rate swap example depends on the LIBOR rate, but in general interest rate swaps are beneficial for companies as it helps them adjust their exposure to rising or falling interest rates (Funk & Hirschman, 2014). However, even these derivatives can be unhealthy for either party if they fail to use their common sense. Exaggerated use can threaten the existence of the party who ends up on the losing side of the deal if the risk is not balanced.

The dangers of derivatives

After showing how the use of derivatives can be beneficial, if the risk is balanced, this section demonstrates how derivatives can be dangerous not only for the economy but also for the parties involved. Whether or not derivatives are dangerous depends on how they are used and if the risk is balanced. The problematic derivatives during the financial crisis were MBS, CDOs and CDS, all part of the shadow banking system and traded in the OTC market between financial institutions. However, it is especially CDOs and CDS that are considered to be some of the main causes for the financial meltdown.

The OTC traded derivatives created a large complex interconnected market because they were frequently traded between financial institutions making it hard for financial institutions to know who owned stakes in what assets, and who were connected to each other in what ways. In January 2007, Partnoy & Skeel Jr. already presented the argument that because recordkeeping in the CDS market was as careless as it was “no firm could be sure how much risk it was taking or with whom it had a deal”. Brunnermeier (2008) further argues that because firms only know their own contractual agreements they may become concerned about counterparty credit risk as they do not
know who is reliable for their side of the deal. To illustrate the complexity one can compare it to a contagious disease (Khan Academy, 2011). The only way to know how safe it is to come into contact with someone is by knowing the health of everyone the person has already been into contact with. Transferring this to the CDS market illustrates that the only way companies can know the riskiness of dealing with a specific customer is to know what contracts they have made with others, which is close to impossible (Partnoy & Skeel Jr, 2007). To understand the different types of ways, CDSs can be used it is possible to put them into three different categories.

The first way a CDS can be used is to insure a loan, also known as hedging a risk. When a fund lends money to a company, it will typically look at the company’s credit rating and charge an annual fee based on this credit rating. The worse the credit rating, the higher annual rate will typically be charged because of the increased risk of defaults. To lower the fund’s exposure to default on the loan, it can buy insurance on the credit risk from an insurance company also known as a protection seller such as AIG. The fund and the protection seller will make an agreement stating the terms of the contract, for instance, what credit event has to happen for the insurance compensation to be paid. The protection seller will just as the fund did, base its fee for the CDS, on its assessment of the probability of a credit event occurring, forcing them to pay out the insurance compensation to the protection buyer (Sjostrum Jr., 2009). When the protection buyer signs a CDS with the protection seller, it, in theory, passes on its risk to the protection seller thus removing its own exposure to the loan. An example from the financial crisis could, for instance, be the bailout of Fannie Mae and Freddie Mac. Their collapse triggered a credit event for investors who had bought a CDS protecting them from Fannie Mae and Freddie Mac’s collapses resulting in large insurance payouts throughout the system (Brunnermeier, 2008).

The second way that CDSs were used was to insure collateralized debt obligations (CDO). CDOs are complex securities drawing their value on the underlying assets they consist of. CDOs can consist of a mixture of different loans, and mortgage-backed

30 It is estimated that AIG insured more than $526 billion in CDSs up to the crisis (Sjostrum Jr., 2009).
31 A credit event is an agreed upon event, stated in the CDS contract, such as a bankruptcy or credit default, that has to happen for the protection seller to pay out compensation to the protection buyer.
securities (MBS). A CDO can, for instance, consist of 150 MBS which in turn consist of several thousand mortgages, showing how complex a CDO can be, and why it is important to notice the differences between the two. First of all, MBSs consist of debt obligations from residential and commercial property and the majority of them were issued by U.S. government-sponsored enterprises. CDOs, on the other hand, could consist of close to anything and were created by private enterprises typically investment banks (Barnett-Hart, 2009). Investment banks invented CDOs because there was a demand for higher-yielding bonds from some investors while other investors wanted bonds with lower risk. Because an MBS bond paid the same interest rate, there was an unmet demand in the market that could be filled with the creation of CDOs (Sjostrum Jr., 2009). Investment banks bought MBS and pooled them together with other types of loans creating the complex derivative bond CDOs. The CDO was then divided into three tranches, where the top tranche, called the senior tranche would be the safest part of the CDO granting the lowest return on investments. The middle tranche, called mezzanine, would be a little riskier granting a little higher return on investments, and the bottom tranche, called the junior or equity tranche, would be the riskiest granting the highest return on investments. The tranche structure of the CDO means that the senior tranche receives interest payments from the loans first, then the mezzanine, and lastly the equity tranche gets filled, as illustrated in figure 9.

32 "Government National Mortgage Association (Ginnie Mae), a U.S. government agency, or the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)" (SEC, 2010).
33 A CDO can in reality consist of as many tranches as the investors demand; however, the most common example is to explain the tranche structure with three tranches (Kothari, 2009)
An example of the tranche structure could look as follows: An investment bank pools loans worth $100 million together into a CDO. They then take the $100 million CDO and divide it into the three tranches, with $40 million in the senior tranche, $30 million in the mezzanine, and $30 million in the equity tranche. The CDO grants an annual return of 10% = $10 million, which will be divided between the CDO investors based on their risk. The senior tranche could grant a 6% annual return on the $40 million investment, granting the senior tranche investors $2.4 million in return. That means that the first $2.4 million out of the $10 million dollars in payments will go to the senior tranche investors.

When all the senior tranche investors have received their return on investments, the mezzanine tranche will begin to get filled. The mezzanine investors could receive a 7% annual return on investment, because they accept a slightly higher risk, meaning that the next $2.1 million out of the $10 million in payments will go to these investors. When all the mezzanine investors have received their return on investments the equity investors gets paid whatever is left. The senior tranche received $2.4 million, the mezzanine $2.1 million leaving $5.5 million to the equity tranche granting them an

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34 The mezzanine tranche grants a 7% annual return on the $30 million investment, grating the mezzanine tranche investors $2.1 million in return.
18.3% return, assuming that there are no defaults or any prepayments in the CDO. However, it is important to understand that even though the equity tranche grants a higher return on investment when everyone is paying their loan payments, it is also the one taking a loss first, when borrowers start to default on their loans. For instance, if the loan payments in the CDO drop by 20 percent thus bringing in $2 million less annually ($10 million/20 = $2 million), those $2 million is taken out of the equity tranche. This means that the senior and mezzanine investors still receive the same return on investments while the equity tranche return drops from $5.5 million to $3.5 million, or from an 18.3% annual return on investment to 11.7% annual return on investment.

The tranche structure of the CDO allowed the investment banks to offer different risk levels to its investors. The CDO created investment opportunities both for investors who wanted very safe investments and very risky investments. Investors were able to choose how much risk they were willing to take on, by investing in either the senior, mezzanine or equity tranches. The credit rating agencies would rate the CDOs and assign each tranche with a credit rating. The senior tranche often received the highest rating (AAA), even if it did not consist of highly rated assets because it was protected by the other tranches and was the first to get paid (Sjostrum Jr., 2009). However, because each CDO is different due to the mix of underlying assets, some CDOs’ senior tranches did not receive high enough ratings for investors such as pension funds to be able to buy these CDOs as they are, as mentioned earlier, only allowed by law to invest in investment grade rated assets. One way the pension funds could get around these regulations regarding credit ratings of the bonds was to insure the bonds through protection sellers like AIG, which is how the CDOs and CDSs were connected. If the senior tranche of a CDO was not rated highly enough for a pension fund to invest in it, it could contact a protection seller and buy insurance on the CDO. By doing so, the insurance company agreed to cover the pension fund’s loss in case the CDO defaults. The bonds will thus receive the insurer’s credit rating, because the risk of the pension fund not getting its

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35 Prepayment is when borrowers pay back their loan before the original maturity date. Prepayments typically happen when interest rates drop as people refinance their mortgages. Investors do not like prepayments because they then lose the interest payments they otherwise would have gotten.
investment back, is no longer the risk of the bonds defaulting, but the risk of the insurer defaulting.

The third of the most common ways CDSs can be used is to speculate on companies or different assets credit quality (Sjostrum Jr., 2009). An example could be that a hedge fund researches a company (XYZ) looking at its books to judge the risk and soundness of the company. The hedge fund concludes that XYZ is too exposed to certain markets and buys a CDS on XYZ, betting that its credit quality will deteriorate or even that the company will go under (Sjostrum Jr., 2009). This can be done by contacting an insurance company and pay them a premium for an agreed time period on whatever the insured notional amount is. For example, the hedge fund could sign a $1 billion CDS betting that XYZ is going to default on a $½ billion loan within two years. The insurance company charges the hedge fund a 2% annual interest, paid quarterly. If XYZ does not default on the loan within the two-year period, the insurance company can pocket the insurance premium $40 million the hedge fund has paid them. However, if XYZ ends up defaulting on the loan, the insurance company will have to pay them the $1 billion they signed the insurance for.

**When trust in the system disappeared**

The derivative market was a very profitable market for the financial sector during the boom. After years with solid earnings, several big Wall Street banks experienced big financial problems when the crisis hit in 2008. Explaining how these big banks could go from seemingly profitable and healthy companies to companies threatened by bankruptcy in a short period of time is by no means an easy task. The fact is that the crisis was a combination of several elements, many of which can be connected to the shadow banking system. The shadow banking system faced huge problems as there was a run on short-term debt because investors lost confidence in the market. As mentioned earlier, when a few investors withdraw their funds, the rest is more likely to follow as human nature

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36 This can actually be more than the company actually has borrowed – for instance the company might owe 1 billion but the hedge fund bets 10 million that it will fail to pay the debt.
37 $1 billion at 2% interest a year = 20,000,000 million for two years = 40,000,000
dictates that humans are safer following the herd. When the confidence in the market disappeared, investors such as MMMF’s pulled their funding from the market. The lack of funding not only created huge problems for financial institutions who depended on short-term funding for their day to day operations but also created an illiquidity in the derivatives market as investors no longer wanted to reinvest in the short-term derivatives. When it became evident that the ratings of bonds, swaps, and companies made by credit rating agencies did not match the riskiness of the investments, investors pulled their money which caused the market to freeze. The lack of confidence in the market is perhaps one of the most important elements, as financial markets are built on trust. When investors believed that the market would keep booming, and housing prices would keep going up, everything was fine. Herd behavior and the confidence in the housing market were thus connected, and an in- or decrease in one of them would thus influence the other in the same direction. As mentioned in the deregulation section of the paper, housing prices in the U.S. increased by more than 60 percent from 2000 to the peak in 2007. As prices started to increase people realized that investing in a house could be a good investment creating a herd of new house buyers that drove prices up even more. This herd believed that when housing prices had increased the past years, why would they not keep increasing in value the following years? This belief was built on confidence in the housing market, a confidence that in turn convinced the herd to buy a house, and, as a result, helped fuel the housing boom. However, in 2006, the housing market started to slow down and in 2007 prices started to fall for the first time in more than 15 years (U.S. Department of Housing and Urban Development, n.d.a). Little by little, Americans who had bought houses they, in reality, could not afford, hoping the value would keep increasing, started to default on their mortgages. These mortgages had been bundled together by shadow banks and repackaged into MBS and CDOs, that were rated by credit rating agencies before they were sold on to investors in the OTC derivatives market. The problems with the OTC derivatives market and the exaggerated ratings made by the credit rating agencies became evident when the market turned, and the trust in the market disappeared. This is exactly what happened in 2008 as mentioned by Joseph Stiglitz: “The present financial crisis springs from a catastrophic collapse in confidence.” (Stiglitz, 2008).
The confidence in the housing market did not only tempt American families to buy a house, but it also tempted financial institutions who were able to make huge profits in the secondary mortgage market. The size of the shadow banking system increased significantly since the 1980s and part of the reason was that they discovered how profitable it would be to sell loans and securities in the derivatives market. Shadow banks were inspired by the way that Fannie Mae and Freddie Mac bought mortgages to free up capital from banks allowing them to issue new mortgages. They used this inspiration to create the securitization process of selling and pooling loans together, changing from the originate-to-hold model to the originate-to-distribute model. This change has been argued to have created a moral hazard and thus an incentive for banks to issue riskier loans as they only hold them for a short period before selling them in the secondary mortgage market.

The selling and pooling of loans took place in the derivative market where derivatives such as MBS and CDOs were sold based on the value of their collateral. The problem was that the value of the collateral was based on the assumption that the boom would remain such as borrowers would be able to keep paying interest and principal on their mortgages (Nersisyan & Randall Wray, 2010). This became even more evident with the riskiest loans issued late in the crisis as a result of increased demand from the secondary mortgage market which created a moral hazard as these homeowners were especially vulnerable to drops in housing prices. If the value of the house fell below the value of the mortgage, the homeowners with the riskiest loans would default on their mortgage leaving investors who owned these mortgages with a bunch of worthless assets. The fact that the MBS and CDOs depended on the value of the houses to remain at or increase to a higher level than the price of the mortgage ultimately created a lot of worthless assets when housing prices declined and people defaulted on their mortgages. These assets became known as toxic assets. The securitization process combined with the use of CDS by shadow banks to make these risky loans appear safe again is what scholars Nersisyan & Randall Wray (2010) argued separated risk from responsibility.

However, it was not everyone who believed that the derivatives market was a safe way to spread risk. Prior to the crisis, financial intellects stood on both sides of
derivatives. The former Fed Chairman Alan Greenspan had been a strong supporter of the use of derivatives for several years and argued in 2005 that derivatives “are essential to the stability and flexibility of the American economy” (Partnoy & Skeel Jr, 2007). Two years earlier he told the Senate banking committee that “what we have found over the years in the marketplace is that derivatives have been an extraordinary useful vehicle to transfer risk from those who shouldn’t be taking it to those who are willing to and are capable of doing so” (Garnaut & Llewellyn-Smith, 2009). Investment expert Warren Buffett saw derivatives in a completely different perspective. In the 2002 annual report of his company Berkshire Hathaway, Warren Buffett wrote a letter to shareholders explaining the company’s view on derivatives. Buffett among other things described derivatives as “time bombs, both for the parties that deal in them and the economical system”, and wrote that “derivatives are financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal” (Buffett, 2003). In hindsight, it is clear that Warren Buffett’s view on derivatives turned out to be true, as derivatives almost collapsed the financial system. While everyone else was investing in derivatives, Buffett went against the herd as he knew the dangers involved. He thus trusted that his own level of knowledge was greater than the herd’s, and did not consider not investing in derivatives as potentially missing out on something profitable.

Part of the reason Buffett saw derivatives the way he did can be found in how interconnected the financial institutions became through their trading in the OTC derivatives market. The use of derivatives was as argued by Greenspan able to spread the risk to those who could best bear it, and could as he argued in a 2002 speech help minimize the impact of a crisis; “such instruments appear to have effectively spread losses from defaults by Enron, Global Crossing, Railtrack, WorldCom, Swissair...”(Greenspan, 2002b). However, during the financial crisis, the exact opposite turned out to be the case, as Buffett had predicted. The way companies used derivatives to spread risk, and bet against each other's defaults created a web of connections between the firms that had not been seen before. An example of interconnections and risk exposure can be seen in Warren Buffett’s letter to shareholders where he explains how

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38 CDOs and CDS
difficult it is to remove an acquired company’s (General Re Securities) exposure to
derivatives: “closing down a derivatives business is easier said than done. It will be a
great many years before we are totally out of this operation (though we reduce our
exposure daily). In fact, the reinsurance and derivatives businesses are similar: Like Hell,
both are easier to enter and almost impossible to exit.”(Buffett, 2003).

Nersisyan & Randall Wray (2010) present an example of how derivatives were
used by Goldman Sachs to “insure” against its investments in risky assets and AIG’s
collapse. Goldman Sachs considered itself to be immune from AIG’s bankruptcy because
it had signed CDS against it. Goldman Sachs could buy risky assets granting them a high
yield, and then sign a CDS with AIG protecting them from a failure of those assets. Even
though Goldman Sachs by doing so would be protected from a failure of those assets,
they could still face a loss if AIG failed to pay out the insurance price because they went
under. Goldman Sachs would thus sign another CDS with another investment bank or
insurance company betting that AIG would fail to pay out the insurance price on the risky
assets. This would, in theory, complete the circle, as Goldman Sachs would be protected
from a default of their risky assets through a CDS with AIG, and from AIG’s failure
through a CDS with a third party.

The problem with this system was that it, in theory, was never ending as assets
were passed on in the non-transparent OTC derivatives market on a regular basis. Even
though Goldman Sachs knew who the third party originally was, there would be nothing
preventing the third party from selling the CDS on without Goldman Sachs’s knowledge.
A failure of a systemically important institution, such as Bear Stearns, which happened
early on in the crisis, could thus create a concern at Goldman Sachs. Goldman Sachs
could worry that the third party had sold the CDS on to Bear Stearns making them the
third party supposed to pay them in case AIG fails. To protect themselves once more, this
could lead Goldman Sachs to sign another CDS protecting them from a failure of the
third party in case the third party turned out to be Bear Stearns.

This structure used by financial institutions created an interconnected system
where companies would insure themselves against defaults and then bet on each other’s
failures to insure themselves once more. This system was supposed to spread the risk;
however, the problem was that it through its non-transparency created a massive, interconnected system where in the end one party would always have to make good on its bets. If that party turned out to fail, it would create ripple effects throughout the system, which is an example of why AIG had to be bailed out by the U.S. government in order to prevent this ripple effect from spreading through the system.

Another problem was that CDS were not only used as described above, they could also be used to destroy other companies. CDS ultimately allowed anyone to bet on the death of any assets or companies. This meant that a company, in theory, could hold debt in another company while at the same time bet on the same company failing through a CDS. If, for instance, company A holds debt in company B, and at the same time buys a CDS betting that company B will go bankrupt, it might be in A’s best interest to let B go under. For instance, A might stand to earn more on the bankruptcy through its CDS agreement than it would if B survives and pays back its debt. This makes A unwilling to help B refinance its debt in order to prevent it from failing. Although not through the use of CDS, Partnoy and Skeel Jr. (2007) present a similar example regarding a 2004 case, where a hedge fund was rumored of letting a company called Tower Automotive go under instead of refinancing its debt. The hedge fund was rumored to stand to earn more on a short position in Tower’s stock than it would if Tower Automotive had been able to pay the loan back. This example represents a conflict of interest where a CDS or a similar practice could potentially be abused to “kill” other companies or competitors.

The use of CDS caused issuers such as AIG to have to pay out large insurance payments during the crisis to honor their derivatives agreements causing them to publish large losses. The large losses caused credit rating agencies to reevaluate their credit ratings, which in some cases resulted in a downgrading of the companies who posted these large losses. The downgrades of different companies created further problems throughout the system. If the credit rating of an issuer or an insurer of a pension fund’s bonds fell below investment grade, it could force the pension fund to sell those bonds as

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39 When the hedge fund stands to earn more on its short position, it means that Tower could owe the hedge fund $100,000 but the hedge fund could stand to earn $200,000 if Tower failed because they had shorted Tower’s stock - Shorting the stock, they had sold the stock at a higher price, hoping to buy back the stock for the original owner at a lower price later on, granting them a profit based on the difference between the selling and purchasing price.
the minimum credit rating required for the pension fund to hold bonds, was no longer present as a result of the downgrading. This could result in the market being flooded with the same type of assets from institutions forced to unload these bonds as a result of the downgrading, driving down the value of the assets.

Defaults and downgrades in the market will thus create a chain reaction throughout the system as the firms were connected to each other in a web of bonds, swaps, and short-term lending. The market perception of the problem would determine whether or not the default of one company would spill over and affect other companies too. During the financial crisis, the market perceived the cause of the defaults and losses to be a general problem in the market rather than a single firm problem. This caused the crisis to spread to seemingly healthy companies as investors invested in banks exposed to the mortgage market became worried and started to pull their money from the banks further damaging the banks’ liquidity.

Investors pulled their money from banks to protect themselves from being left holding worthless assets. This is in line with Keynes’s theories that argued that “The actual, private object of the most skilled investment to-day is “to beat the gun”... to outwit the crowd, and to pass the bad ... to the other fellow.” (Keynes, 1954). Keynes further compares valuation of assets with a game of musical chairs, where you have to secure yourself a chair before the music stops. The one who does not have a chair loses the game (Keynes, 1954). Chuck Prince, former Citigroup CEO, knew that the boom prior to the financial crisis would eventually end with a bust yet argued that they still had to play the game of musical chairs as described by Keynes as long as the economy was booming “When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you’ve got to get up and dance. We’re still dancing.” (Brunnermeier, 2008). This belief expressed by Citigroup’s former CEO in July 2007 shows how financial firms felt pressured by herd mentality to follow the herd, deliberately ignoring the dangers despite being fully aware that the market would eventually turn. Another reason for this could be found in the idea that they were too-big-to-fail and that the government would eventually step in and save them if things got too far out of hand (Acharya, Cooley, Richardson & Walter, 2011). This idea is a result of
moral hazard where companies know, or strongly believe that someone, in this case the government, will provide them with extra resources if needed thus allowing them to take more risk. This turned out to be true for many too-big-to-fail institutions as the Fed, Treasury, and the FDIC stepped in and saved the economy. As argued by Yale economist Gary Gorton: “only a late bold move by the Fed and Treasury to guarantee the commercial paper market, to guarantee bank deposits up to $250,000, and inject the banks with tens of billions, saved the day” (Lenzner, 2014).
The influence of lobbyism

So far we have established that deregulation and government policy since the 1980s created opportunities for financial institutions to expand their business into new areas. However, one important element in relation to how this period of deregulation was created still has to be examined. This section is devoted to showing how lobbyism efforts played a central role in influencing the political and legislative measures taken in the decades leading up to the financial crisis in 2008. First, we provide an overview of the ways the private sector can influence the political process and present data of the evolution of lobbying expenditure between 2006 and 2014. Next, we examine the role of financial institutions in the process of passing the Financial Services Modernization Act, which repealed the Glass-Steagall Act. Finally, we connect lobbying expenditure to the distribution of government bailout funds by presenting data that lobbying institutions were more likely to receive bailout funds.

Wall Street in Washington D.C.

There are different ways private companies in the United States can influence the political landscape. One way is to carry out lobbying activities in the executive and legislative branches of the government. It is called lobbying because lobbyists would stand and wait in the lobby of a government building for politicians and regulators to come down so that they could try to influence them. Another way is through election campaign contributions to political action committees (PACs). The two methods are used for different purposes. As Igan and Mishra (2011) puts it: “campaign contributions aim at putting or keeping the “right” candidates in office while lobbying expenditures seek to influence the opinion of those who are already holding the power to make the decisions.” Companies can either hire outside lobbyists, or they can have in-house lobbyists employed.

Ultimately businesses lobby because they believe it will benefit their bottom line. However, making such a cost-benefit analysis is difficult, as it is close to impossible to evaluate how much a looser regulation will affect the bottom line. It is very difficult to
navigate in the political arena as it is constantly unpredictable and interests and expenditures (i.e. the cost of blocking or passing a specific bill in Congress) change all the time, and from case to case (Drutman, 2015). Lobbying companies often do not know exactly what they are “buying” (in terms of lobby efforts), and the value of the activity cannot be measured until after the “purchase.” The fact that it is so difficult to navigate is the reason companies hire lobbyists that are experts in the political process. Lobbyists benefit greatly from the fact that politics is so unpredictable and information-heavy, as it makes them invaluable for companies that need lobbyists to advise them on strategy.

Many lobbyists have previously worked in the government as regulators or legislators, which gives them good network connections in Washington. These network connections are commonly referred to as the revolving door because many in Washington move from the private sector to a government position and vice versa. Studies have shown that using lobbyists with legislator backgrounds generate more revenue for the lobbying company. Furthermore, using a connected lobbyist increases the likelihood of a legislator switching position on an issue (Igan & Mishra, 2011). By definition, the revolving door goes both ways, in that it is not only regulators and legislators that go work for the private sector, it is also private sector workers that go work for the government. For example, as mentioned earlier, the Secretary of the Treasury in the George W. Bush administration, Henry Paulson, came from a position as CEO of Goldman Sachs. Robert Rubin, who was the Treasury Secretary under Clinton, used to be co-chairman also of Goldman Sachs, and after serving as Treasury Secretary Rubin became chairman of Citigroup. It is not only at the top executive level that the “door revolves”, but also at lower levels. There especially seem to be a tendency that Goldman Sachs employees go into public service after they leave the company (Johnson, 2009). This revolving door mechanism has, according to former chief economist of the IMF Simon Johnson, created a sort of cultural capital, or belief system, for the financial sector in Washington D.C, which has given the industry political power. Johnson argues that the philosophy in Washington has changed from friendliness towards the manufacturing sector to friendliness towards the financial sector; “Once, perhaps, what was good for General Motors was good for the country. Over the past decade, the attitude took hold that what was good for Wall Street was good for the country” (Johnson, 2009).
Earlier, this paper has established that the era of deregulation that began in the 1980s with Ronald Reagan was a major contributor to the financial crisis in 2008. This deregulation period can be connected to the revolving door as many congressmen and regulators came from a background in the financial sector. This increased the likelihood that they would have a positive view on banks and see unregulated free-flowing capital as crucial to the American economy, something the sector benefited from in the years prior to the crisis. This is the cultural capital, or belief system that Johnson talks about.

Lobbyism activities of private enterprises increased significantly in the last decades of the 20th century and into the 21st century. Before the 1970s, very few companies had their own lobbyists in Washington. Political contact was mostly left to trade associations, and even that was very limited and unsophisticated compared to today’s lobbying standards (Drutman, 2015). Before, corporations saw government as a hindrance that should be avoided and kept at a distance. However, since the middle of the 1970s, corporations have learned to work with the government and to use it for their own benefit. “It’s gone from ‘leave us alone’ to ‘let’s work together’ ” (Drutman, 2015). Since then corporations have spent more money on lobbying for almost each passing year.

Each year companies and special interest groups spend billions of dollars on lobbying activities. Especially the financial sector has increased its lobbying spending compared to the rest of the private sector since 2006. In 2006 American companies and special interest groups spent a total of $2.63 billion on lobbying activities. $380 million of these were lobbying expenditures from the Finance, Insurance and Real Estate Industry, which is the sector most relevant for the purpose of this paper. In 2014, the amount of lobbying expenditures from this sector had increased to nearly $500 million, an increase of almost 32 percent. The total lobbying expenditure for all sectors increased only 24 percent in the same period (Center for Responsive Politics, 2015). This indicates that lobbying efforts intensified relatively more in the financial sector than in all other sectors. Furthermore, while total lobbying expenditures for all sectors saw a peak in 2010 and a decrease since then, the lobbying expenditures for the Finance, Insurance, and Real Estate Industry has increased every year. This trend can be seen in figures 10 and 11.
which show the total lobbying expenditures by all sectors and the lobbying spending by the Finance, Insurance, and Real Estate Industry, respectively.

Figure 10

**Total Lobbying Spending ($ Billion)**

Adapted from: Center for Responsive Politics, as of October 2015.

Figure 11

**Annual lobbying by the Finance, Insurance and Real Estate Industry**

Source: Center for Responsive Politics, 2015, as of October 2015
**Case study of the Financial Services Modernization Act of 1999**

To show how the interest of different lobbying groups shaped the outcome of the financial crisis we present a case study on lobbying institutions’ influence on the passage of the Financial Services Modernization Act as we argue it played an important role in the crisis. As mentioned earlier, the repeal of the Glass-Steagall Act paved the way for commercial and investment banks to merge, which is what propelled the expansion of the shadow banking industry that was a major contributor to the financial crisis in 2008. The financial groups that lobbied for or against the repeal of Glass-Steagall were commercial banks, investment banks, and insurance companies. We present evidence throughout the case of how these groups’ opinions changed over the years and how they came together as one giant entity that was able to shape the political landscape to suit their particular interests.

Over the years, financial institutions have had very different objectives with their lobbying efforts in Washington D.C. As mentioned earlier commercial banks and investment banks had disagreements over the provisions of the Glass-Steagall Act. The commercial banks wanted the law to be repealed while investment banks wanted it to stay. Moreover, insurance companies also fought to keep the law in place because they did not want competition from commercial banks. Suarez and Kolodny (2010) give a historical overview of the several attempts over the years to repeal the Glass-Steagall Act. In the early 1980s, the profits of commercial banks started to decline as their customers began to seek out other investment opportunities mainly from investment banks dealing with securities as well as MMMF’s. The commercial banks thus started to lobby for the repeal of the Glass-Steagall Act, and they had support from the Reagan administration as well as Senate Republicans. However, both investment banks and insurance companies lobbied against it. Furthermore, the House of Representatives was led by the Democratic Party, who were generally against looser financial regulation. In the mid-1980s, there was a shift in the attitudes of some Democratic congressmen who were now more open to deregulation. This led House Democrats to introduce a bill that would repeal Glass-Steagall, but once again investment banks and insurance companies lobbied against it.
successfully (Suárez & Kolodny, 2010). The disagreements between the institutions remained similar in the next couple of years.

During the George H. W. Bush administration, which also supported a repeal of the Glass-Steagall Act, one of the groups changed their view on the Act. Investment banks had now decided not to oppose a repeal of Glass-Steagall as long as they would be allowed to do commercial bank activities and thus have access to the Federal Reserve’s discount window. Insurance companies were still against a repeal, in fact, they wanted increased regulation on commercial banks. A number of bills were proposed in both houses of Congress, and the insurance industry was very successful in closing loopholes, that would have allowed banks to enter the insurance market. This made both commercial and investment banks withdraw their support for the bill, and ultimately it was not passed. Again it was the difference of objectives in the financial sector that prevented a repeal of Glass-Steagall (Suárez & Kolodny, 2010).

In 1992, Bill Clinton was elected president and this further marked a shift in the Democratic Party’s attitude toward the role of government in private enterprise. However, in 1994 the Republicans took over both the Senate and the House of Representatives, which made it difficult for the president to get anything passed. Republicans and Democrats had disagreements on various issues regarding how the structure of the companies should be after a repeal of Glass-Steagall\(^40\). Some bills were proposed, but the financial sector still could not find a solution that would satisfy all three groups, so again nothing was passed because of the companies’ lobbying efforts. Insurance companies were not happy with the bills as they, in their opinion, changed nothing, and investment banks were still not sure if they would be allowed to enter the commercial banking market. By the late 1990s, even commercial banks had withdrawn their support for a repeal because they did not want the SEC and other regulators too much oversight into their business (Suárez & Kolodny, 2010). However, the merger of Citicorp and Travelers, mentioned earlier, was a signal that commercial banks were becoming more open to a repeal of Glass-Steagall than they had been in the previous years.

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\(^{40}\) Some wanted to allow commercial banks to affiliate with securities firms via subsidiary purchases, and some wanted commercial banks to form holding companies.
In 1999, after many discussions about the how the financial services industry should be allowed to integrate, the different actors in the industry, commercial banks, investment banks and insurance companies, all came to an agreement. Whenever lawmakers had disagreements, and the negotiations seemed likely to collapse, financial sector lobbyists would step in and make sure that they would find a way to compromise (Suárez & Kolodny, 2010). As banking lobbyist Edward Yingling said to the FCIC: “Because we had knocked so many holes in the walls separating commercial and investment banking and insurance, we were able to aggressively enter their businesses—in some cases more aggressively than they could enter ours. So first the securities industry, then the insurance companies, and finally the agents came over and said let’s negotiate a deal and work together.” (FCIC, 2011). The Financial Services Modernization Act, or Gramm-Leach-Bliley Act, which was signed into law in November 1999, did exactly what the financial sector companies wanted—the possibility of expanding to other markets without being subject to more oversight from government agencies.

The history of the Financial Services Modernization Act is an example of how much influence the financial sector has in Washington, but also shows how important it is that they are united in its interests. When the industry actors had disagreements, it was only possible to block legislation, but when they all agreed on supporting the bill, it passed relatively quickly. Suárez and Kolodny (2010) argue that the interests of financial institutions are the most important factor contributing to the passage of the Financial Services Modernization Act, which played a significant role in the foundation for the financial crisis in 2008. There is no doubt that the repeal of Glass-Steagall was a contributor to the financial collapse in 2008, and since lobbying was important for this piece of legislation, it is safe to say that lobbying played a role in the financial crisis in 2008.

**Lobbying expenditures and the distribution of bailout funds**

The influence of lobbying can be seen in the fact that bills loosening financial regulation are more likely to be signed into law than bills tightening regulation. In the
years leading up to the financial crisis, there were numerous attempts from financial institutions to block bills that would tighten financial regulation, and almost all of them were successful. In fact, between 1999 and 2006 95 percent of all bills promoting tighter financial regulation were never signed into law. For example, in the early 2000s, Citigroup lobbied hard against the Predatory Lending Consumer Protection Act that would tighten restrictions on lenders. Citigroup spent a total of $3 million lobbying against this bill, which as a result was never signed into law. On the other hand, in addition to the Financial Services Modernization Act, two other key pieces of legislation that loosened financial regulation, the American Homeownership and Economic Opportunity Act and the American Dream Downpayment Act mentioned earlier, were signed into law (Igan, Mishra & Tressel, 2011). The fact that bills promoting looser financial regulation were more likely to be signed into law is evident in figure 12, which shows that the proportion of bills becoming law is bigger when the bills introduce looser financial regulation than when they introduce tighter financial regulation. This could be a sign that lobbying powers are stronger when it comes to deregulation as it is in the interest of financial markets to make the market as unregulated as possible.

Figure 12

Passage of Bills

Source: Igan & Mishra, 2011
Another indication of the influence of lobbyism as a contributor to the financial crisis in 2008 can be seen in the way lobbying financial institutions behaved in the years leading up to the crisis. In a study examining the role of lobbyism in the financial crisis, Igan, Mishra and Tressel (2011) find that lobbying lenders were more likely to issue risky mortgages before the crisis than non-lobbying lenders. They analyze three different measures of mortgage lending: loan-to-income ratio, proportion of loans sold, and mortgage loan growth rates, which can be seen as an indicator of risk taking. The findings were that lenders that lobbied more intensively originated mortgages with higher loan-to-income ratios; that lobbying lenders securitized and sold proportionately more mortgages than non-lobbying lenders; and finally that lobbying lenders had faster growing mortgage portfolios, which also indicates that they took more risks (Igan, Mishra & Tressel, 2011). These results indicate that banks that spent money on lobbying activities took larger risks in terms of mortgage lending before the crisis. This could be explained with the reasoning that if banks spent enough money on lobbying and campaign contributions, they felt that they would be the first to be rescued if the economy went bad. Or maybe financial institutions felt that they would be less subjected to government oversight and regulation if they used their money and network connections shrewdly. This may be a cynical way to look at lobbyism by financial institutions, but it is natural to think that if banks thought they would get preferential treatment, either through bailouts or less government supervision, they would increasingly take on more risks. Taking risks with the assumption that you get rescued either way is an example of moral hazard, which is often mentioned in connection with the financial crisis in 2008.

That lobbying lenders took more risks before the crisis also meant that they suffered worse during the crisis. In their study, Igan, Mishra, and Tressel (2011) find that lobbying institutions experienced negative stock returns to a much greater extent than non-lobbying lenders when Bear Stearns and Lehman Brothers collapsed. In turn, the lobbying banks experienced greater stock returns than non-lobbying institutions when the

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41 How much a buyer is borrowing relative to his annual income. If a buyer has an income of $50,000 and wants a $150,000 loan, the loan-to-income ratio is three (150,000/50,000 = 3). The higher the loan-to-income ratio, the riskier the loan.

42 Mortgages that get securitized and sold on to investors.
government bailout was announced in October 2008. This is probably because investors assumed that the political influence of lobbying financial institutions would be beneficial when the bailout money was distributed. However, even before the crisis happened, many banks almost knew that they would get bailed out by the government.

As the investors predicted, lobbyism did play a role in determining which banks would get bailed out in 2008. According to Igan, Mishra, and Tressel’s study, there is a strong link between lobbying and getting bailed out in 2008. They find that lenders that lobbied were more likely to be bailed out and that those who lobbied received a bigger piece of the cake. Sixteen of the twenty financial institutions that spent the most on lobbying between 2000 and 2006 were helped by the government bailout funds. Furthermore, 60 percent of the total bailout funds were given to lobbying financial institutions. For example, in 2006, Citigroup spent nearly $7 million on lobbying activities, AIG spent $9.37 million, and JPMorgan Chase spent $6.21 million. In 2007, these three companies all spent more than in 2006 (AIG even exceeded $11 million in spending) and Bank of America more than doubled their lobbyism spending to $4.73 million\textsuperscript{43} (Center for Responsive Politics, 2015). These four corporations were among the top seven recipients of government bailout funds after the financial crisis in 2008 (ProPublica, 2015). This supports the argument that lobbyism expenditures helped determine the recipients of bailout funds, although it is impossible to conclude anything based only on these numbers. The argument does not explain why Lehman Brothers, who also spent money on lobbying, was not bailed out in 2008. However, the explanation for this could possibly lie in the amounts spent. In comparison to the other major financial institutions, Lehman Brothers “only” spent $920,000 on lobbying activities in 2006 and even less in 2007. Again, it would be wrong to conclude that if Lehman Brothers had spent more on lobbying they would have been bailed out. However, it is a curious coincidence that the one major financial institution that was not bailed out spent significantly less (both in actual dollar amounts, but also relative to the size of the company)\textsuperscript{44} on lobbying activities compared to the other companies that were bailed out.

\textsuperscript{43} See appendix xxx for detailed information about different banks’ lobbying expenditures over the years.
\textsuperscript{44} See appendix for calculations of lobbyism spending relative to the size of company.
As mentioned, political connections, which are partly a result of the revolving door, have proved to be beneficial as well, also in the bailout distribution. A small example of this is OneUnited Bank in Boston which did not look like it would get help from the government bailout funds. However, the bank received $12 million from the government as part of the bailout program. The reason was that the head of the House Financial Services Committee, Barney Frank, fought for the bank, which is from his home state. Other powerful politicians have also fought for banks in their home states to get part of the bailout funds (Paletta & Enrich, 2009).

All in all, it is clear that lobbyism and the political connections of the financial industry have played a significant role in shaping the political process and landscape since the 1980s and forward. The cultural capital that the financial sector has created in Washington through the revolving door is what facilitated the financial deregulation that ultimately was the main cause of the financial crisis in 2008. A key piece of legislation was the passage of the Financial Services Modernization Act in 1999, which repealed the Glass-Steagall Act. In the 1980s and 1990s the different parts of the financial sector, commercial banks, investment banks and insurance companies, disagreed on how the law should look, but when they aligned their interests in 1999 their political power was enormous, and the law was passed to the satisfaction of both the industry and lawmakers. It appears that lobbying activities also mattered when the crisis hit. When the government bailed out the financial sector, the likelihood of getting bailed out was bigger for lobbying companies than non-lobbying companies. In addition, political connections have proved to be important in terms of getting part of the bailout funds, as the example of OneUnited Bank shows.
The Dodd-Frank Act and too-big-to-fail

As established above, financial deregulation created the foundation from where shadow banking emerged. This together with government policies pushing for larger homeownership among Americans, created a housing boom that when it burst created one of the worst crises in U.S. history. Our analysis shows how the crisis emerged and what factors we argue caused the crisis: The repeal of the Glass-Steagall Act that allowed banks to merge and form large financial firms; the excessive use of OTC derivatives by financial institutions to securitize and bet on the survival of bonds and companies; the run on short-term funding in the shadow banking industry causing financial firms who depended on this funding to fail or need to be bailed out by the government; the excessive risk-taking by big financial firms that expected to be considered too-big-to-fail by the U.S. government; and the use of lobbyism by financial institutions to influence legislators and regulators. After analyzing these factors and how they contributed to the financial crisis, it is relevant to look at the political measures taken in the wake of the crisis.

The Dodd-Frank Act

The goal of political measures taken in the wake of the crisis should be to enhance the soundness and stability of the U.S. economy while at the same time try to fix the problems that caused the crisis, much like the Glass-Steagall Act sought to do after the Great Depression. The government bailouts in 2008 helped prevent the U.S. economy from a complete collapse through Keynesian-inspired government interventions in the economy which conflicted with the free market ideologies of Friedman that had ruled in the U.S. since the 1980s. Furthermore, the bailouts made the too-big-to-fail problem even more relevant, as some of the bailouts resulted in large Wall Street mergers and acquisitions creating even larger corporations. The too-big-to-fail problem was in our perspective not a cause of the crisis; however, it can be a cause or problem for a future crisis. This is what the biggest financial reform in the wake of the crisis among other things aims to fix. The biggest reform to regulate the financial industry post-2008 was the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, most commonly known as the Dodd-Frank Act, named after the former House Financial
The Dodd-Frank Act introduced measures to identify and regulate systemic risk, and to do that it created the Financial Stability Oversight Council (FSOC). The FSOC is chaired by the Treasury Secretary, and it consists of top officers of various financial regulatory bodies including the Federal Reserve, the SEC, and the FDIC. The Council’s main role is to assess the systemic importance of financial institutions and advise the relevant regulatory bodies on recommended policies which could include leverage limits and liquidity requirements. However, the Act does not specify which policies should be followed in order to regulate systemically important institutions; it merely provides a list of possible policies that the Council can recommend for implementation (Acharya, Cooley, Richardson & Walter, 2011).

The Dodd-Frank Act also increases the responsibility and authority of the Federal Reserve in order to preserve financial stability. One of the changes is assigning a Vice Chairman for Supervision among the Board of Governors who will oversee regulations within the Fed’s jurisdiction. Another change to the Federal Reserve is that their ability to provide federal emergency assistance to individual institutions is limited compared to before the law was enacted. This limitation was added because of political dissatisfaction with some of the Fed’s bailouts during the crisis.

Furthermore, the Dodd-Frank Act reintroduces the Glass-Steagall Act, although in a limited form. The Act limits the amounts some financial institutions are allowed to invest in proprietary trading activities. This rule is often referred to as the Volcker rule, after the former Chairman of the Fed, Paul Volcker. The expectance of the Volcker Rule has caused many financial institutions to get rid of their proprietary trading departments which include their hedge fund departments. The financial industry tracking firm Preqin estimates that as a result of the expected Volcker Rule, as many as 214 out of 1,428 new hedge funds have been established by former bank employees between 2011-2014 (Tracy & Rudegeair, 2015).

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45 Proprietary trading is when a firm trades using its own money as opposed to customers’ money.
Another central point of the law is the regulation of OTC derivatives market in order to make the market more transparent. The Dodd-Frank Act changed the provisions of the Commodity Futures Modernization Act that exempted OTC derivatives from being regulated. As a result, the SEC and CFTC now regulate the OTC derivatives market which is what Brooksley Born attempted to do in the late 1990s. The new regulations are implemented to make the OTC derivatives market more transparent minimizing the risk that a default of a major participant in the derivatives market will bring down the system as financial institutions through transparency know their counterparty risk (Acharya, Cooley, Richardson, & Walter, 2011).

The legislators who introduced the Dodd-Frank Act promised it would “promote the financial stability of the United States by improving accountability and transparency in the financial system,” “end too-big-to-fail” and “protect consumers from abusive financial services practices” (Financial Services Committee, 2010). However, many of the rules included in the Act, which many hoped would have been more comprehensive, have not yet been implemented. This is partly because of the lobbying efforts of financial institutions. Both before and after the Act was passed, financial industry lobbyist worked hard to water down the provisions of the Dodd-Frank Act that would impose regulations on the financial sector. Before it was passed in 2010 American commercial banks spent $18.6 million dollars trying to block the passage of the Dodd-Frank Act (Rivlin, 2013). In addition to this number comes lobbying expenditures from investment banks, insurance companies and business associations including the U.S. Chamber of Commerce, which spent close to $300 million dollars on lobbying activities in 2009 and 2010 (Center for Responsive Politics, 2015). After the Dodd-Frank Act was passed, in a more diluted version than originally proposed, the financial sector increased its lobbying spending in an effort to change the language and provisions of the Act. Since the Act was passed in 2010 until 2013, commercial banks alone had spent $50.7 million dollars attacking the law (Rivlin, 2013). Together with investment banks, insurance companies, and business associations, commercial banks have been fairly successful in delaying rules and

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46 The U.S. Chamber of Commerce is a private business interest organization representing more than three million businesses and it is the biggest lobbying organization in the U.S.. It was against the passage of the Dodd-Frank Act.
provisions in the Act. By the end of 2015, almost a third of the rules included in the Act have still not been implemented (Davis Polk, 2015). This includes the Volcker Rule, which was one of the centerpieces of the Dodd-Frank Act. In January 2015, the House of Representatives, under pressure from financial sector lobbyists, voted to delay the Volcker Rule to be implemented in 2019. This was the second time the Volcker Rule was delayed as the Federal Reserve previously had delayed it until 2017. As mentioned, the Volcker Rule would prohibit (or strongly limit) certain banks from doing proprietary trading which is partly an attempt to limit the problem of too-big-to-fail, as it would decrease the banks’ ownership of risky investments (Puzzanghera, 2015).

The issue of too-big-to-fail was one of the areas that the Dodd-Frank Act aimed to fix, and it once again became an important subject in the wake of the crisis as taxpayers became enraged with the large government bailouts of financial institutions. This rage was partly fueled by the fact that several of the bailed out financial institutions used part of their bailouts for huge bonuses to their employees. For example, nine of the biggest bailout recipients paid more than 5,000 employees bonuses of more than $1 million dollars for 2008 (Story & Dash, 2009).

The future of too-big-to-fail

As mentioned early in the paper, Paulson, Bernanke, and Geithner decided to bailout several financial institutions as they considered them to be too big and too interconnected and that their failure would substantially damage the U.S. economy. A bailout of these companies would thus create less turmoil in the financial markets than their bankruptcy would. Bernanke believes that bailouts are to be preferred in some cases despite how uncomfortable they might be, and is known for comparing bailouts with a fire in a neighbor's house. Consider “a hypothetical neighbor who smokes in bed and, through his carelessness, starts a fire that begins to burn down his house. You could teach him a lesson, Bernanke says, by refusing to call the fire department and letting the house burn to the ground. However, you would risk the fire spreading to other homes. So first you have to put out the fire. Only later should you deal with reform and retribution.”
(Acharya, Cooley, Richardson & Walter, 2011). The hypothetical neighbor example made by Bernanke is a good description of why bailouts in some situations are to be preferred. The Lehman brothers failure during the crisis is a good example of what happens if you choose to “teach your neighbor a lesson”. The market’s reaction to Lehman Brothers’s failure during the crisis, almost removed all the remaining confidence in the U.S. economy. Lehman Brothers was one of the institutions considered too-big-to-fail and the markets, as well as Lehman Brothers expected the government to intervene and bail them out. When Lehman Brothers was allowed to fail it pushed the U.S. economy towards a complete collapse as described by economist Alan Blinder “everything fell apart after Lehman … After Lehman went over the cliff, no financial institution seemed safe. So lending froze, and the economy sank like a stone … ” (Swedberg, 2010). Following the collapse of Lehman Brothers, Bernanke, Geithner, and Paulson bailed out several large financial institutions to prevent the fire from spreading, and containing the crisis.

A few years later, when the fire was put out, the Dodd-Frank Act marked the reform part of Bernanke’s example. The Dodd-Frank Act proposed to end too-big-to-fail through different provisions such as procedures for unwinding of systemically important institutions, and required that the costs of wind-downs would be carried by shareholders and creditors instead of taxpayers (Acharya, Cooley, Richardson & Walter, 2011). Too-big-to-fail is thus not solely a question regarding the size of a company but also about how connected the company is to others through systemic risk. Evaluating whether or not the Dodd-Frank Act has managed to minimize the too-big-to-fail problem in relation to systemic connections between financial institutions is far beyond the grasp of this paper. The Dodd-Frank Act, stretching over more than 2,300 pages is so comprehensive, and the attempts to minimize systemic risk can exist in so many different forms that it requires an in-depth analysis of the entire Act to judge which provisions can or cannot be successful in minimizing systemic risk with regards to too-big-to-fail. However, there are signs that the Dodd-Frank Act have not been successful in minimizing systemic risk so far which can be seen in the delays of provisions of the Act such as the Volcker Rule. Despite the fact that the Dodd-Frank Act was signed into law in 2010, the Volcker Rule, often mentioned as one of the most important parts of the Act seeking to make the market more
transparent which should help minimize systemic risk and thus the too-big-to-fail problem, still has not been implemented, and is now delayed until 2019 as we mentioned above.

Despite not entering into an in-depth analysis of how the Dodd-Frank Act seeks to minimize systemic risk in an attempt to fix the too-big-to-fail problem, it is possible to look at too-big-to-fail in relation to the size of the financial institutions as a result of the government bailouts during the 2008 crisis. The size of financial institutions plays an important role in relation to too-big-to-fail as these mega-banks control a large portion of the U.S. banking assets. The President of the Federal Reserve Bank of Dallas from 2005-2015 (Dallas Fed, n.d.), Richard W. Fisher testified in a 2013 speech in front of the U.S. House of Representatives about the problems with these mega-banks. Among other things, he argues that the government bailouts during the financial crisis have created “a lopsided financial system”, where two-thirds of total assets in the U.S. banking industry, in the wake of the crisis, are concentrated in 0.2 percent of all banking organizations which has increased “the likelihood and severity of another crisis” (Fisher, 2013). We agree with this concern as the banks that keep growing can take excessive risk, thus creating even more moral hazard. As Fisher puts it: “Without fear of closure, these banks and their counterparties can take excessive risk” (Fisher, 2013). If the largest banks do not have to worry about the downside, or, at least, the catastrophic downside, because they expect to be bailed out, it creates a moral hazard and thus an incentive to increase their risk in order to grow even larger, further increasing the possibility to fall under the too-big-to-fail category. The fact that two-thirds of total U.S. banking assets are owned by only 11 out of an estimated 5,500 financial institutions increases the systemic risk of each company. If one of these 11 companies fail it would result in a large decrease in the size of the financial sector - not only because of the loss of one firm but because of the interconnectedness in the sector that makes all banks vulnerable to the failure of others. This vulnerability is a potential risk when a future crisis occurs. The government bailouts during the crisis show that the biggest banks received the biggest bailouts (ProPublica,

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47 The Federal Reserve of Dallas estimates that there are around 5,500 banking organizations in the U.S. in 2013 (Fisher, 2013)
The increased concentration that has happened after the 2008 crisis could therefore likely result in future government bailouts being larger than the ones made during the financial crisis in order to prevent the too-big-to-fail banks from going bankrupt.

Besides the increased concentration of U.S. banking assets among these large institutions, too-big-to-fail also creates a competitive advantage over financial firms that do not fall into this category. These financial firms still have to balance their risk in order to ensure the existence of their company as they do not have a safety net in government bailouts. The competitive advantage of having this safety net enjoyed by the too-big-to-fail institutions can result in financial firms that fall outside of this category being unable to compete with the large ones. Another risk can be that the smaller financial firms deliberately try to become increasingly more complex and interconnected to increase their systemic risk, or that they take on higher risk in order to grow faster so that they too can become defined as too-big-to-fail. This would, in turn, increase moral hazard.

The bailouts in 2008 resulted in mergers among some of the big financial institutions with government assistance. This naturally increased their size as well as reducing the number of institutions concentrating U.S. banking assets further. For instance, JPMorgan Chase acquired Bear Stearns, and Bank of America acquired Merrill Lynch with assistance from the Federal Reserve and Treasury. From 2007 before the crisis to 2010 JPMorgan Chase’s total assets increased from $1,562 billion to $2,118 billion and in the same period Bank of America’s total assets increased from $1,715 billion to $2,265 billion. The result of the 2008 crisis and the government bailouts is that the remaining banks that were deemed too-big-to-fail prior to the crisis have become even bigger, and, as a result, the too-big-to-fail issue is even more relevant now. This can create unprecedented problems for the future and the U.S. economy.

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48 See Appendix 3 for a list of the biggest banks (by asset size) from 2010 to 2015.

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Conclusion

When asked “who is to blame for the financial crisis” people have a tendency to immediately point at Wall Street, as the financial crisis of 2008 is often considered to be a result of excessive greed from Wall Street institutions. That Bear Stearns was leveraged at a ratio of 1:33 when it collapsed in March 2008 in many ways supports this claim, making Wall Street greed the easy explanation. However, as our analysis shows, the problem goes much deeper than just blaming the Wall Street companies that, to be fair, did use excessive risk. We argue that Wall Street firms only took excessive risk because the government made it possible for them, much like a dog will eat a steak if you place it right in front of it. According to capitalist ideologies, that Wall Street firms arguably follow, they do all they can to maximize their profits. If the U.S. government had not deregulated the economy beginning in the 1980s, there would have been no steak for Wall Street to eat. Thus, the crisis was in many ways caused by a failure of government and it is thus important that the political measures taken in the U.S. since the 1980s are explained to understand how they created the system that created the financial crisis of 2008.

In 1999, after years of deregulation, the financial sector lobbying organizations celebrated one of its largest victories with the removal of the Glass-Steagall Act. Since the early 1970’s, commercial banks had lobbied hard to wind down the Act; however, the financial industry was divided on the issue. Investment banks knew that if commercial banks succeeded in removing the Glass-Steagall Act, it would create larger competition in the securities market, and they lobbied to defend their market. It was not until the late 1990’s, when the financial sector came together, that the Glass-Steagall Act was repealed, as part of the Financial Services Modernization Act.

The repeal of the Glass-Steagall Act was controversial as the Act had been implemented in the wake of the stock market crash of 1929, to prevent commercial banks from jeopardizing ordinary American’s bank deposits by investing in risky securities. The repeal opened up for the possibility of commercial banks, investment banks, and insurance companies to join forces under the same roof, in the form of multipurpose mega-banks. A year before the repeal of the Glass-Steagall Act, an at the time illegal
merger between Citicorp and Travelers Insurance Group forming Citigroup took place, creating the biggest financial conglomerate at the time. Despite the merger being illegal at the time, the two companies expected that the Act would be repealed due to the long period of financial deregulation that began in the early 1980s.

Mergers like the one above is a direct consequence of the period of deregulation that the repeal of the Glass-Steagall Act was part of, and one that created a number of issues for the U.S. government during the financial crisis. During the financial crisis, the U.S. government bailed out a number of institutions that were either considered too interconnected or too big and thus too systemically important, commonly known as too-big-to-fail. Allowing financial institutions to grow to these sizes increased moral hazard and created a need for government bailouts, as the four largest institutions alone controlled around 40% of total U.S. banking assets. A failure of these four financial institutions would thus remove a dangerously large portion of U.S. banking assets, severely crippling the U.S. economy, creating problems for everyday America. Furthermore, the failure of one bank could jeopardize the others as they were all very interconnected.

The financial problems of the too-big-to-fail institutions during the financial crisis of 2008 created a dilemma for the U.S. government. On the one hand, it could follow the neo-liberal ideology of Friedman and Hayek dominant in the U.S. since the 1980s that stated that allowing financial institutions to fail during a bust is necessary for the economy to remove the unhealthy elements and stabilize and heal itself in the long run. On the other hand, it could choose a Keynesian approach and intervene to save the economy from a complete short-term collapse. The U.S. government ultimately chose to rely on Keynesian economic theory by intervening in the economy and acted against the free market theory that it had followed since the 1980s. This shift from free market ideologies towards government interventions during times of crisis in many ways happened the same way the shift from Keynesian to free market ideologies happened in the 1980s when Ronald Reagan was elected as President of the U.S..

Ronald Reagan was elected during a period of troubled financial times in the U.S., with a promise to get the government off the backs of the American people. Reagan, a free market advocate, inspired by Milton Friedman, believed that government was the
problem, not the solution to the crisis. The troubled financial times combined with the
election of Reagan thus created a shift of economic belief in the U.S. from Keynesianism
to Friedman’s ideology, initiating nearly three decades of financial deregulation. In his
final years in office, Reagan appointed Alan Greenspan as Chairman of the Federal
Reserve. Greenspan, a fellow free market advocate who also believed in a minimal role
for government, served as Chairman for 18 years and stepped down just two years before
the crisis. Towards the end of his term, Greenspan lowered the Federal Funds Rate in the
early 2000’s, as a response to the stock market crash in 2000 and the terrorist attacks on
September 11, 2001. The low Federal Funds Rate pushed investors into the housing
market and, therefore, played a major role in forming the housing bubble, and thus in
creating the crisis.

Besides the role the low Federal Funds Rate played in creating the housing
bubble, the U.S. government also influenced the housing bubble through a number of
programs designed to promote homeownership among Americans. For example, the
government demanded that at least half of the mortgage portfolios of the government-
sponsored enterprises (GSE) Fannie Mae and Freddie Mac had to be comprised of
mortgages to low-income households. These programs created moral hazard and
influenced the financial crisis in at least two ways. On the one hand, however good the
intentions were, it created a large pool of risky mortgages as low-income households
were more likely to default on their mortgage. On the other hand, it helped to inflate the
housing bubble, through the increased demand for housing from these low-income
households. The programs, despite good intentions of helping low-income households
buying a house, contributed to the financial crisis in 2008 as there would not have been
this extra pool of buyers, and thus an increased demand for houses, without these
programs.

The creation of the GSE’s Fannie Mae and Freddie Mac not only played a part in
the financial crisis through the demand for houses but also through the demand for home
mortgages. The process used by Fannie Mae and Freddie Mac to buy mortgages from
mortgage lenders to free up their capital to issue new loans inspired the development of
securitization in the so-called shadow banking industry. Shadow banks developed a
securitization process of pooling multiple loans together to form bonds protected by the law of large numbers. The mortgage bonds, part of the OTC derivatives market, became very popular and profitable investment opportunities in the shadow banking industry, creating a demand for mortgages. Because mortgage lenders knew that they would only hold loans for a short period of time before being able to sell them in the secondary mortgage market, it caused them to change from an originate-to-hold to an originate-to-distribute model. This increased their incentive to issue riskier loans as they would no longer hold the mortgages in their own portfolios. The mortgage lenders would profit as soon as they sold the mortgage in the secondary mortgage market, and at the same time pass the risk on to the next buyer in the securitization channel.

The OTC derivatives market was a completely unregulated market that turned out to be a major cause of the financial crisis. In the late 1990’s attempts were made by then CFTC Chair Brooksley Born to warn and suggest that the OTC derivatives market should be regulated. However, the financial sector, as well as top government regulators including Greenspan, did not share her view. The decision not to regulate OTC derivatives was made official in 2000 with the passage of the Commodity Futures Modernization Act (CFMA), another financial deregulatory measure. The passing of the CFMA leaving the OTC derivatives market without government control turned the market into a wild west where the financial sector could continue to bet on the life of different assets, and to insure different types of derivatives. As a result, the OTC derivatives market grew to a huge non-transparent market that displayed its shortcomings during the hectic days of the financial crisis. The interconnectedness of financial firms, combined with not knowing who was at risk of losing money to who created a modern run on banks driving investors to pull their funds from banks exposed to the housing market. The failures of OTC derivatives and the fact that investors pulled funds from exposed banks created a liquidity shortage in the industry. This, in turn, caused the market to freeze, making the previously very liquid market highly illiquid. The failure of the bonds in the OTC derivatives market made it obvious that the non-transparent market was far from as perfect as the industry and government regulators had thought, and that Brooksley Born’s warnings should have been taken seriously.
Financial institutions dealing in the OTC derivatives market were highly leveraged which multiplied the effects of market losses. The use of leverage increased significantly after 2004 when the SEC lowered capital requirements for five investment banks. Banks used leverage to earn higher profits during the housing boom, however, in 2006, the housing market slowed down and in 2007 prices started to fall. Little by little, Americans holding the riskiest loans started to default on their mortgages. As a result of the increase in defaults, the use of leverage that during the boom period had generated large profits for banks now caused them to lose money extremely fast. The use of high leverage that multiplied the loss of money in the financial sector caused several banks to lose more than their value, ultimately causing them to fail. In hindsight, the SEC rule for the five investment banks was arguably part of the reason that three out of the five investment banks failed during the crisis.

After presenting our argument that deregulation was the basic influential factor behind the financial crisis, a question of what to expect for the U.S. economy in the future emerges. The response from the U.S. government to the crisis was to pass the Dodd-Frank Act that dealt with multiple areas argued to be part of the financial crisis. Despite the Dodd-Frank Act being passed in 2010, many of the different legislative actions supposed to fix the problems that caused the financial crisis have still not been implemented. This is partly due to lobbying efforts by the financial industry to prevent and slow down the implementation so that they can act freely in the same markets they did prior to the financial crisis. The financial crisis displayed what was wrong with the financial system, and our research shows that this can be traced back to government policies and deregulation. We consider it problematic that despite the dramatic consequences of the 2008 financial crisis, lobbying efforts of financial institutions are still able to influence the political landscape in areas that proved to be main causes of the financial crisis that almost brought down the U.S. economy. Changing this would require a reform of lobbying rules to minimize the influence of the private sector on legislators and regulators, something that could be the subject of research for future academic papers.
Another area the Dodd-Frank Act was supposed to fix was the too-big-to-fail controversy. Strictly looking at the size of the financial institutions after the financial crisis, this problem has not been dealt with yet. We consider this to be a problem that needs attention as the size of financial institutions during the crisis posed a dilemma for the U.S. government. The bailouts during the crisis were the largest ever seen in the U.S. during a financial crisis, and arguably these bailouts will be even larger if some of the largest financial institutions end up failing during the next financial crisis. The controversy of too-big-to-fail is thus not only important in relation to the 2008 crisis, but also for the future, and it could thus be interesting to perform a comprehensive analysis of the Dodd-Frank Act in relation to what it originally proposed to do and how it will end up when all rules are implemented in the future.

In many ways, the financial markets can be compared to a football game. Both financial markets and football consist of different rules that the players have to follow in order to participate in the game. Depending on the game, the referee and their interpretation of the rules can change and sometimes players are allowed to push the boundaries a little more. One thing is, however, certain, every game needs a referee to make sure the players stay within the rules of the game. Otherwise, one after one the players will start ignoring the rules in order to win the game. In many ways, this is what happened during the financial crisis. The players (Wall Street) were given a looser interpretation of the rules (legislation) when the U.S. government (the referee) began to deregulate the economy in the 1980s. The implementation of the Dodd-Frank Act in the wake of the crisis could be a sign that the football game is about to get a stricter referee making sure the rules of the game are upheld. However, the players will continue to try to influence the referee to loosen the rules of the game to their advantage.
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## Appendices

### Appendix 1

**Rankings of Wall Street banks, and Wells Fargo based on total assets 2007**

<table>
<thead>
<tr>
<th>Company</th>
<th>Total assets end of 2007 ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citigroup (1)</td>
<td>$2,187,63149</td>
</tr>
<tr>
<td>Bank of America (2)</td>
<td>$1,715,74650</td>
</tr>
<tr>
<td>JPMorgan Chase (3)</td>
<td>$1,562,14751</td>
</tr>
<tr>
<td>Goldman Sachs (4)</td>
<td>$1,119,79652</td>
</tr>
<tr>
<td>Morgan Stanley (5)</td>
<td>$1,045,40953</td>
</tr>
<tr>
<td>Merrill Lynch (6)</td>
<td>$1,020,05054</td>
</tr>
<tr>
<td>Lehman Brothers (7)</td>
<td>$691,06355</td>
</tr>
<tr>
<td>Wells Fargo (8)</td>
<td>$575,44256</td>
</tr>
<tr>
<td>Bear Stearns (9)</td>
<td>$395,36257</td>
</tr>
</tbody>
</table>

49 \(^{49}\) (Citigroup Inc., 2008)  
50 \(^{50}\) (Bank of America, 2008)  
51 \(^{51}\) (JPMorgan Chase & Co., 2008)  
52 \(^{52}\) (Goldman Sachs, 2008)  
53 \(^{53}\) (Morgan Stanley, 2008)  
54 \(^{54}\) (Merrill Lynch, 2008)  
55 \(^{55}\) (Lehman Brothers, 2008)  
56 \(^{56}\) (Wells Fargo, 2008)  
57 \(^{57}\) (Bear Stearns, 2008)
Appendix 2

Federal Reserve assets from 2007-2014

Source: Michel & Moore, 2014
## Appendix 3

**Total Assets ($ Billion) of The Biggest Banks in the U.S.**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>J.P. Morgan Chase &amp; Co</td>
<td>2.417</td>
<td>2.573</td>
<td>2.416</td>
<td>2.359</td>
<td>2.266</td>
<td>2.118</td>
</tr>
<tr>
<td>2</td>
<td>Bank of America Corp</td>
<td>2.153</td>
<td>2.105</td>
<td>2.102</td>
<td>2.210</td>
<td>2.128</td>
<td>2.265</td>
</tr>
<tr>
<td>3</td>
<td>Citigroup</td>
<td>1.808</td>
<td>1.843</td>
<td>1.890</td>
<td>1.865</td>
<td>1.874</td>
<td>1.914</td>
</tr>
<tr>
<td>4</td>
<td>Wells Fargo &amp; Company</td>
<td>1.751</td>
<td>1.867</td>
<td>1.527</td>
<td>1.423</td>
<td>1.314</td>
<td>1.298</td>
</tr>
<tr>
<td>5</td>
<td>Goldman Sachs Group</td>
<td>880.559</td>
<td>856.2</td>
<td>911.5</td>
<td>938.6</td>
<td>923.2</td>
<td>911.3</td>
</tr>
<tr>
<td>6</td>
<td>Morgan Stanley</td>
<td>834.113</td>
<td>801.5</td>
<td>832.7</td>
<td>781.0</td>
<td>749.9</td>
<td>607.7</td>
</tr>
<tr>
<td>7</td>
<td>U.S. Bancorp</td>
<td>415.943</td>
<td>402.5</td>
<td>384.0</td>
<td>353.9</td>
<td>340.1</td>
<td>307.8</td>
</tr>
<tr>
<td>8</td>
<td>Bank of New York Mellon</td>
<td>377.371</td>
<td>385.3</td>
<td>374.3</td>
<td>359.0</td>
<td>325.3</td>
<td>247.3</td>
</tr>
<tr>
<td>9</td>
<td>PNC Financial Services Group</td>
<td>582.125</td>
<td>345.2</td>
<td>320.3</td>
<td>305.1</td>
<td>271.2</td>
<td>264.3</td>
</tr>
<tr>
<td>10</td>
<td>Capital One</td>
<td>313.700</td>
<td>309.1</td>
<td>297.1</td>
<td>312.9</td>
<td>206.0</td>
<td>197.5</td>
</tr>
<tr>
<td>11</td>
<td>HSBC North America Holdings</td>
<td>231.611</td>
<td>230.1</td>
<td>230.0</td>
<td>318.8</td>
<td>331.4</td>
<td>343.7</td>
</tr>
<tr>
<td>12</td>
<td>State Street Corporation</td>
<td>247.274</td>
<td>274.1</td>
<td>243.3</td>
<td>222.6</td>
<td>216.8</td>
<td>160.8</td>
</tr>
</tbody>
</table>

Source: Relbanks, 2015
Appendix 4

Lobbyism spending by financial institutions

Lehman Brothers:

![Annual Lobbying by Lehman Brothers](image)

Source: Center for Responsive Politics, 2015

Bear Stearns:

![Annual Lobbying by Bear Stearns](image)

Source: Center for Responsive Politics, 2015
Bank of America:

Source: Center for Responsive Politics, 2015

Citigroup:

Source: Center for Responsive Politics, 2015
JPMorgan Chase:

Source: Center for Responsive Politics, 2015

Goldman Sachs:

Source: Center for Responsive Politics, 2015
AIG:

Source: Center for Responsive Politics, 2015

Morgan Stanley:

Source: Center for Responsive Politics, 2015
Fannie Mae:

Source: Center for Responsive Politics, 2015

Freddie Mac:

Source: Center for Responsive Politics, 2015
Wells Fargo:

Source: Center for Responsive Politics, 2015