DIPLOMARBEIT

Titel der Diplomarbeit
The development of the Subprime Crisis in the USA and its impacts on selected industries

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Vienna, 2010

Florian Moosbeckhofer
1. Introduction

In the year 2007 the world economy was hit by the most severe crisis since the great depression in the year 1929. The crisis had its origin in the banking system of the United States of America, which allowed dealing with extremely risky securities called Subprime Mortgages.

As the trigger of the crisis, the USA were severely affected whole branches of the economy collapsed. This resulted in an increasing number of unemployed people and a unprecedented volume of funds awarded to rescue companies, invest into highways, the water supply or other infrastructural projects.

But it soon became clear that every US citizen is going to pay for the crisis and the help provided to the companies. And in many cases banks and financial institutions were awarded money that can be seen as partly responsible for the whole crisis. These companies were never really held responsible for the damage caused and have continued investing into risky securities and other financial products.

For all of us it is clear that there are many losers of the Subprime Crisis in the US, but whenever there are losers there are often parties that are able to generate a profit. These are companies that got rid of competitors, or if these were people that bought property at low prices and are therefore better off after the crisis.

In the following diploma thesis the basic structure of the US market for subprime mortgages will be examined and we will take a look at the historical development of this type of financial product.
After this four different sectors and segments of the US economy will be examined, these can be seen in figure 1.

![Selected Sectors and Segments](self constructed)

In the detailed analysis a closer look on each of these segments or sectors will be taken and the history of this share of the US economy during the crisis will be observed.
2. History of the Subprime Crisis in the USA

The first indications for a possible upcoming crisis were already recognized a few years before the actual outbreak of the Subprime Crisis and its spreading around the globe. The market for subprime loans has been seen as quite problematical by many finance experts. They tried to warn about the development of surely highly profitable but also very risky financial products. But because of the facts that also governments tried to increase their budget by speculating on the subprime markets and that many companies were interested in doing business in this particular field these operations have never been ceased.

To understand the complex structure of today’s subprime market, the historical development of the US mortgage market has to be taken into consideration.

2.1. Structure of the subprime market

Before the year 1938, the US mortgage market was dominated by so called regulated depository institutions. This category contained banks and savings and loan associations, which used their capital to grant loans for new homes (Kiff & Mills, 2007). Due to the fact, that these lenders kept the loans in their portfolios, they also held the credit risk, they absorbed the risk of interest rate fluctuations in the market and they also coped with the liquidity risks. As time went by, the incentive to provide fresh capital to the market disappeared and so the liquidity of the markets was reduced. This was because of the quite high risks that these depository institutions had to bear. (Kregel, 2008)

To provide fresh capital to the market, the US government created the Federal National Mortgage Association in the year 1938. This corporation was also known as Fannie Mae and was fully governmental owned. The goal of Fannie Mae was to create a secondary market for mortgages.

“Fannie Mae bought mortgages from the originators, returning the cash proceeds to the institutions. By buying the mortgages outright and holding them as a portfolio, Fannie Mae acquired the credit risk, market risk, and liquidity risk.” (Dodd, 2007)
Due to the fact that Fannie Mae was a governmental cooperation, it was able to borrow money longer than its competitors. This created a competitive advantage on the market. Another fact was that the portfolio was nationwide diversified and because of this, the credit risk was well suspended. Even in the year 1938 Fannie Mae only purchased mortgages that fulfilled strict underwriting standards. Today these rules and standards are used to identify “conforming” loans which are synonymous with our modern “prime” mortgages.

This governmental cooperation was very successful and in the year 1960, its borrowing constituted a large share of the US governmental debt. In order to remove Fannie Mae’s activities from the federal operating budget, the government-sponsored mortgage market was reorganized in the year 1968. One result of the reorganization was the creation of the Government National Mortgage Association, which was also called Ginnie Mae. Its task was to handle government-guaranteed mortgages.

In the year of 1970 this new association developed the mortgage-backed security\(^1\) and the government created the Federal National Mortgage Corporation, known as Freddie Mac. (Ashcraft & Schuermann, 2008)

Freddie Mac’s goals were to create competition to the recently privatized Fannie Mae and to provide securities for conventional mortgages (Kiff & Mills, 2007). As time went by, Fannie Mae and Freddie Mac provided huge sums of funding for the US mortgages. They did this by purchasing and holding large amounts of prime mortgages and by transforming enormous numbers of home loans into mortgage-backed securities.

Then these mortgage-backed securities were sold to wealthy individual investors, institutional investors and depository institutions. This procedure was created to spread the market risk, to offer a new class of loan assets to depository institutions and to open new sources of capital for the mortgage market. After the creation of the market for mortgage-backed securities, market risk was completely removed from the balance sheets of mortgage originators and also from the balance sheets of Fannie Mae and Freddie Mac. Due to the long-funding of the mortgages even the liquidity risk was nearly fully eliminated. But much of the credit risk stayed with Fannie Mae and Freddie Mac, because they guaranteed for the loans. Only their huge size and their widespread risk diversification allowed these two companies to cope with the whole credit risk. (Chomsisengphet & Pennington-Cross, 2006)

\(^1\) A mortgage backed security is a financial obligation that is secured by a portfolio of mortgage loans.
They provided the so called securitization, “Securitization involves the pooling of mortgages into a special-purpose vehicle, which is simply a corporation registered in what is usually an offshore tax haven country. The corporation issues shares that represent claims on the mortgages. The simplest structure is for the pool to pass through the payments on its mortgages to the security holders, whereas more complicated structures divide the payments into higher and lower risk segments.” (Dodd, 2007)

The process of securitization provides the originators the possibility to avoid any exposure to credit, market or liquidity risk. Theoretically this is favorable for all market parties because buyers of securities obtain more liquid and diversified mortgage assets and the overall market is becoming more capitalized.

2.2. Private companies enter the market

This structure existed quite unchanged until the year 2003. A few years before, Fannie Mae and Freddie Mac had to pay huge fines to the government, because of serious deviances of the accounting rules for mortgage backed securities. As a result of these fines, both companies got weaker and because of this huge private Wall Street firms entered the market in an aggressive way.

At the end of 2003 the governmental sponsored enterprises, issued 76 percent of all mortgage-backed and asset-backed securities. The remaining 24 percent were already “private label” securities issued by major Wall Street firms. Among the issuers of these “private label” securities firms like HSBC, New Century Financial, Countrywide, JPMorgan, Goldman Sachs, Lehman Brothers or Bear Stearns can be found. Later on, some of these companies were also the first firms that were forced to declare bankruptcy in the wake of the Subprime Crisis of 2008. The top originators of subprime mortgages are shown in figure 2. It can be seen, that in 2005 HSBC issued 58.6 billions of dollars of subprime mortgage loans. Until the year 2006 this number decreased by 9.9 percent to 52.8 billion of dollars. That can be explained by the overall decreasing volume of the subprime mortgage market. (Dodd, 2007)
The Wall-Street firms operated very successfully on the market of mortgage backed securities, which the market share of government-sponsored enterprises declined to 43 percent by mid-2006. The other 57 percent have been issued by private owned companies. (Dodd, 2007)

The private companies tried to maximize their profit by issuing and originating high-risk sub-prime mortgages. These obligations were very risky but provided a very high profit. Figure 3 shows the different risks of the different obligation classes and the change of the different risk classes in the time from the year 2003 to the year 2006. This figure shows the enormous increase in the issuance of lower rated securities, which can be explained by the higher interest rates that an investment in these classes offered to the investors.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Lender</th>
<th>2006 Volume ($b)</th>
<th>Share (%)</th>
<th>2005 Volume ($b)</th>
<th>%Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HSBC</td>
<td>$52.8</td>
<td>8.8%</td>
<td>$58.6</td>
<td>-9.9%</td>
</tr>
<tr>
<td>2</td>
<td>New Century Financial</td>
<td>$51.6</td>
<td>8.6%</td>
<td>$52.7</td>
<td>-2.1%</td>
</tr>
<tr>
<td>3</td>
<td>Countrywide</td>
<td>$40.6</td>
<td>6.8%</td>
<td>$44.6</td>
<td>-9.1%</td>
</tr>
<tr>
<td>4</td>
<td>CitiGroup</td>
<td>$38.0</td>
<td>6.3%</td>
<td>$20.5</td>
<td>85.5%</td>
</tr>
<tr>
<td>5</td>
<td>WMC Mortgage</td>
<td>$33.2</td>
<td>5.5%</td>
<td>$31.8</td>
<td>4.3%</td>
</tr>
<tr>
<td>6</td>
<td>Fremont</td>
<td>$32.3</td>
<td>5.4%</td>
<td>$36.2</td>
<td>-10.9%</td>
</tr>
<tr>
<td>7</td>
<td>Ameriquest Mortgage</td>
<td>$29.5</td>
<td>4.9%</td>
<td>$75.6</td>
<td>-61.0%</td>
</tr>
<tr>
<td>8</td>
<td>Option One</td>
<td>$28.8</td>
<td>4.8%</td>
<td>$40.3</td>
<td>-28.6%</td>
</tr>
<tr>
<td>9</td>
<td>Wells Fargo</td>
<td>$27.9</td>
<td>4.6%</td>
<td>$30.3</td>
<td>-8.1%</td>
</tr>
<tr>
<td>10</td>
<td>First Franklin</td>
<td>$27.7</td>
<td>4.6%</td>
<td>$29.3</td>
<td>-5.7%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>$600.0</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>$664.0</strong></td>
<td><strong>-9.8%</strong></td>
</tr>
</tbody>
</table>

Figure 2 - Top Subprime Mortgage Originators (Demyanyk & Van Hemert, 2008) p.4

<table>
<thead>
<tr>
<th>Type</th>
<th>2003</th>
<th>Jan.-June 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime</td>
<td>57.6 (52)</td>
<td>67.2 (26)</td>
</tr>
<tr>
<td>Subprime</td>
<td>37.4 (34)</td>
<td>114.3 (44)</td>
</tr>
<tr>
<td>Alt-A</td>
<td>15.8 (14)</td>
<td>76.5 (30)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>110.8</strong></td>
<td><strong>258.0</strong></td>
</tr>
</tbody>
</table>

Figure 3 – Issuance of below investment-grade securities mortgage-backed-securities ballooned between 2003 and 2006. Billion dollars (percent of total) (Dodd, 2007)
The strategy of the Wall-Street firms to originate even low-rated debt securities led to a new problem. The companies had to find customers that were willing to invest in very risky sub-prime loans. Prime mortgage-backed securities were often sold to institutional investors, who were able to buy large amounts of securities, but these investors were not able to buy the new sub-prime mortgage-backed securities, because of their strict investment guidelines. These investors had enormous problems buying below-investment-grade securities. (Demyanyk & Van Hemert, 2008)

With the problem of selling below-investment-grade securities in mind, the “private labels” were looking for ways to sell those securities on the market. After a short time, the Wall-Street firms came up with a complex solution. They began to split the securities into low-risk investment-grade segments and into high-risk segments. The segments with the higher-risk were lower rated and finally the two segments were again pooled together and transformed into collateralized debt obligations.

Such a pool consists of different classes of risks, and so every investor could be supplied with the suitable risk. The least risky class is also known as the senior tranche and provides the right, to be the first to receive money out of the payments of the pooled mortgages. This class also has the best credit rating AAA, but because of the safe character of this class it receives the lowest interest rates. After the senior tranche, the middle tranche is paid back and this is also a tranche that is usually paid back in full. After this the equity tranche is served and this is often the class with no full repayment but with the highest interest rates. This pooling model allows each class to be traded separately and so the market prices the risk itself.

Usually investors like hedge funds found the lower rated tranches attractive for investments. They accepted the high risk, because of the high interest rate offered. “Hedge funds have quickly become important sources of capital to the credit market,” but “there are legitimate concerns that these funds may end up inadvertently exacerbating risks.” (FitchRatings, 2005)

Collateral debt obligations cannot be traded on the classical stock exchanges. Because of this fact, the trading of these obligations took place on over-the-counter (OTC) markets. On these markets, the trade is directly done between buyers and sellers. The conducted sales are not public and even prices and volumes of trades are not revealed. Trades on OTC markets do not provide transparent price finding processes and there is no kind of market control.
2.3. The beginning of the end

In the year 2007 the problematic granting of credits to non-creditworthy clients in the USA escalated. A large number of credits defaulted and as a result many banks and financial institutions around the world were forced to declare bankruptcy.

In a short period of time, the markets for subprime mortgage-backed securities became illiquid and investors stopped trading. This caused enormous problems, because hedge funds were locked in very difficult and damaging positions. Hedge funds were the first parties that were confronted with serious problems, because of their high leverage. For survival the most hedge funds needed to come up with fresh capital to refinance their trades.

Because of the investment stop of the hedge funds and other risk friendly investors, the secondary market for securities ceased to exist. Many originators of below-investment-grade securities were now unable to carry the inventory of the mortgages they had made. This caused huge problems, because the capitalization of these companies was also often insufficient. As a result many publishers of sub-prime-obligations filed for bankruptcy protection and disappeared from the market. This lead to the burst of the housing bubble, because many loans were granted to credit unworthy persons to finance a home.

Many international banks were involved in the market for below-investment-grade securities at its peak. This is the main reason, why the Subprime Crisis affected the whole world economy in such a disastrous way. The effects of the crisis on international companies will be explained in chapter 3.

A short summary of the impacts of the Subprime Crisis on Europe can be found in chapter 2.6 later in this thesis.
2.4. The bursting of the housing bubble

Another major reason for the crisis was the bursting of the US housing bubble. Before this incident, up to 80% of the mortgages issued were so called adjustable-rate mortgages\(^2\). (Dodd, 2007)

The credit was backed with the new home as a security and a certain increase in the price of the new property was considered as a sure thing. But recently the housing prices in many metropolitan areas in the US declined by 10 to 15% in the year 2007. (Dubnicsek, 2009)

Figure 4 shows this decline in the US housing prices, due to the fact, that the mortgages were secured by the underlying properties this reduction lead to serious problems.

\[\text{Figure 4 - The decline in the housing market (Tatom, 2008) p.5}\]

\(^2\) An adjustable-rate mortgage (ARM) is a mortgage loan which interest rate is regularly adjusted and changed based on different variables.
When the housing bubble burst at the end of the year 2006, people were confronted with more difficult refinancing of their homes. The next problem was that the adjustable-rates of the mortgages soared and this resulted in higher rates for the credits.

At this point many households were not able to pay back their credits anymore and so the mortgage delinquencies and foreclosures in the US rose enormously. “Subprime lenders made too many loans to borrowers who didn’t make enough money to make the monthly payments. In some cases, lenders didn’t even bother to verify borrowers’ incomes.” (Associated Press, 2007)

Figure 5 shows the number of foreclosure of property in the US in the first quarter of 2008 with the corresponding types of securities.

<table>
<thead>
<tr>
<th></th>
<th>Foreclosure rate</th>
<th>Loans serviced</th>
<th>Loans in foreclosure</th>
<th>Percent of loans serviced</th>
<th>Percent of foreclosed loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime</td>
<td>1.22</td>
<td>35,311,975</td>
<td>430,806</td>
<td>78.1</td>
<td>38.6</td>
</tr>
<tr>
<td>Subprime</td>
<td>10.74</td>
<td>5,542,954</td>
<td>595,313</td>
<td>12.3</td>
<td>53.3</td>
</tr>
<tr>
<td>FHA</td>
<td>2.4</td>
<td>3,256,579</td>
<td>78,158</td>
<td>7.2</td>
<td>53.3</td>
</tr>
<tr>
<td>All loans</td>
<td>2.47</td>
<td>45,224,567</td>
<td>1,117,047</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 5 – U.S. foreclosures in the first quarter 2008 (Tatom, 2008) p.4

In the year 2007 experts Stated, that the total volume of subprime mortgage loans was 600 billion dollar in the year before. This amount accounted for one-fifth of the US home loan market. It was estimated, that 1.3 trillion dollar in subprime mortgages was outstanding. (Associated Press, 2007)

A large number of the outstanding loans were subprime loans. This is also shown in figure 6.
2.5. Structure of the market for securities

The market for securities and obligations can be divided into different categories of securities. The classification of the different financial products is conducted by rating agencies and by the banks. There are three basic requirements that securities have to meet, they have to be exchange traded, standardized and customized. (Cecchetti S., 2007)

The safest market is the “prime market” and the corresponding obligations are called prime-mortgage-loans. These loans have to fulfill strict underwriting standards set by Fannie Mae and Freddie Mac. Prime mortgages loans are very unlikely to default and are only made to borrowers with excellent credit records. To be worthy of a prime-loan, borrowers have to have a monthly income that is at least three times higher than their monthly housing costs.

All mortgages that do not fulfill the standards of prime-mortgage loans are generally classified as sub-prime-loans.
In general sub-prime-loans are riskier and the borrowers are not able to meet all the required criteria for getting a prime-loan. Often subprime borrowers are individuals with low income and a bad credit score. Often these persons are single-parents, older people or people that belong to a minority, due to the fact, that subprime mortgages have a much higher rate of default than prime loans, the probability for such borrowers to get into financial trouble is higher.

In the US almost all home loans belong to the category of sub-prime-loans. Therefore it is very understandable, why the number of foreclosures has reached such a high level. It is quite problematically that banks had a strong incentive in giving out these high-risk mortgages due to their very high interest rates.

To be able to identify these risky papers there has been some well established rating systems, provided by so called rating agencies. These companies are looking at the different mortgages and calculate the probability of a default. The result of this process is a ranking of the likelihood of a full repay.

Today there are ratings for single shares, mortgages, bundled securities, companies, whole stock markets or even countries. The result of the rating is important for the credit conditions in the future. The better the rating, the cheaper you can borrow money from banks or other institutions.

On the international market, there are mainly three leading rating agencies. S&P, Moody’s and Fitch. These companies examine ratings for financial products, companies and whole countries. All ratings from AAA to A- are summarized as “Investment Grade” the rating categories from BB+ to CCC- are called “Speculative Grade”. Depending on the rating class, there are different interest rates and rates charged. A summary of the different rating classes can be seen in figure 7. (FitchRatings, 2005)
Most of today’s securities can be categorized as exchange traded, standardized and customized. In most cases the traded obligations can be assigned to one of these categories and are traded by so called clearinghouses. (Cecchetti S., 2007)

This trading system is one the one side helping you to sell your obligations and it is also supporting you with information on securities you want to buy. One of the most severe risks in dealing with financial products is the assurance that all involved parties are meeting the approved obligations. (Cecchetti S., 2007)
2.6. Excursion: The impact of the Subprime Crisis on Europe

When the Subprime Crisis started to affect the economy of the USA, experts warned that an influence on the European markets will be unpreventable. Shortly after these warnings the European Central Bank pumped $150 billion of emergency funds into the financial markets. This money was supposed to stabilize and to calm the reactions of the investors. (Dyer, 2007)

But even all the money granted and guarantees given was not able to stop the increasing panic on the European financial markets. In the year 2007 the European Central Bank offered unlimited money to borrowers at its main lending rate of 4% to prevent an expected credit crush.

The following figure 8 is showing the development of the Austrian stock index ATX over the past five years.

![Figure 8 – Development of the ATX over the last 5 years (Wiener Börse)](wiener-boerse.at)

It is very visible, that the shockwave of the Subprime Crisis in the US hit the Austrian markets after one year.
The impacts caused severe difficulties on the European and Austrian stock markets and put the economies under enormous pressure. Exports started to decrease and the number of unemployed people rose. Especially Germany was heavily affected as it is one of the most active trade partners of the US.

The following figure 9 shows the decrease in vacant jobs on the German labor market after the year 2007 in thousands.

![Figure 9 - Development of vacant positions on the German labor market 2005-2010 (Argentur für Arbeit, 2010)](image_url)

As shown in figure 9, after an all time high of vacant positions in the year 2007 the number of jobs offered dropped significantly. This development can be related to the general crisis of the German economy triggered by the Subprime Crisis. (Argentur für Arbeit, 2010)

As the Crisis went on, the Central Banks of all European Countries were forced to reduce their prime rates. This action gave companies the possibility to get loans with very little interest and to mellow the impacts of the subprime crisis. The development of the prime rates in different countries can be seen in figure 10.
Figure 10 – Development of the prime rates in different countries (Österreichische Nationalbank, 2010)

With a prime rate of only 1% the European Central Bank is providing a huge stimulus for the economy. But this was only one of many measures to help the European economy to recover and to mellow the impacts of the Subprime Crisis.

The European Central Bank is also encouraging banks to grant new loans to the wide public. This is important because the buying power and the willingness to spent are crucial to overcome this Crisis.

Banks are awarded with large sums of money for very little rates of interest in unlimited volume and for long terms. In the year 2008 €442 billions were given to banks to ensure the sufficient capitalization.

Also loans in different currencies are provided by the European Central Bank. This measure should remove problems with the supply with different currencies. (Trichet, 2009)

But also countries and large companies are profiting from the low rates of interests for fresh capital provided by the central banks. As the Subprime Crisis forced governments all around
the globe to help struggling companies to survive. The debts of many countries are therefore increasing. The following Figure 11 is showing the development of the Austrian debts in % of the GDP over the last years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Debt as % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>0.0</td>
</tr>
<tr>
<td>2002</td>
<td>-0.7</td>
</tr>
<tr>
<td>2003</td>
<td>-1.4</td>
</tr>
<tr>
<td>2004</td>
<td>-4.4</td>
</tr>
<tr>
<td>2005</td>
<td>-1.0</td>
</tr>
<tr>
<td>2006</td>
<td>-1.6</td>
</tr>
<tr>
<td>2007</td>
<td>-0.6</td>
</tr>
<tr>
<td>2008</td>
<td>-0.4</td>
</tr>
<tr>
<td>2009</td>
<td>-3.5</td>
</tr>
</tbody>
</table>

Figure 11 – Development of the Austrian debts in % of the GDP (Österreichische Nationalbank, 2010)

The impact of the Subprime Crisis will cause a huge decline in Austrian debt. The value of debts in percent of the GDP will rise from about 0.5% in the years 2007 and 2008 to 3.5% in the year 2009. And this is just one effect of the Crisis.

Just recently Austria was differently affected by the Subprime Crisis when the Bundesfinanzierungsagentur (ÖBFA) had to admit, that the loss of 619, 9 Millions of Euros is highly possible. This is the result of subprime obligations, which were bought just after the start of the Subprime Crisis in the year 2007. (APA, 2009)

And this problem of investments into high-risk financial problems is no single case. The most prominent example is the BAWAG. During the year 2006 bankers of the Austrian BAWAG lost nearly two billion Euros with investments into very risky financial products. But because of the upcoming Subprime Crisis these swaps and obligations collapsed and almost caused this bank to declare bankruptcy.

In the wake of these events the BAWAG was overtaken by the US company Cerberus and top managers were taken into custody.
3. Winners of Losers of the Subprime Crisis in the USA

When looking at the impacts of the Subprime Crisis on the global and especially on the US economy, almost everybody seems to be sure that it has had only negative effects. A lot of money was lost either on the stock markets or when companies were forced to declare bankruptcy. (Dubner, 2008)

People lost their homes and the number of foreclosures rose extremely. Banks changed their credit granting policies and introduced very strict rules to be provided with a new loan or mortgage. The government pumped huge sums of money into the markets to stabilize them and to reduce the impacts on the economy. By doing this companies were rescued and the laws of the market equilibrium were shifted. Even if a company was conducting unprofitable business, if the public had an interest in rescuing it from going bust, it could acquire public aids and therefore stay on the markets.

But there are also parties that were able to generate profit out of this problematic situation. When looking at the Subprime Crisis we are confronted with a period of collapsing share prices. This means that some people lost a lot of money. But on the other hand, other traders were able to buy shares at extremely low prices and profit from the recovering stock markets afterwards. By doing this some people and institutions were able to double or triple their invested capital in the last year.

Another example for winners of the Subprime Crisis are companies that were able to get rid of their competitors. This can be observed in the finance sector and even in the automotive industry. If for example, a large number of banks are forced to declare bankruptcy the competition on this market is reduced.

These facts just lead to the assumption, that there have been some parties that profited from the crisis. This advantage can appear in very different shapes but what is clear, these people or companies are better off after and because of the crisis.

Of course there are parts and parties of the economy that can be called losers of the Subprime Crisis, but again on the opposite site there are people or companies that were able to generate profits out of the situation and can be named winners.
3.1. Selected subsectors

There are different opinions concerning how to define the sectors of the US economy. Different experts have created lists and models about the sectors that, in their opinion, are the most important for the economy. It is hard to say which model or classification of the sectors is the most accurate or precise.

For the rest of my diploma thesis I am going to use the official definition of the US sectors published by the US government. It is a well established and widely accepted layout and it is really simple. By this definition the US economy has the following design. (U.S. Government, 2007)

![Diagram of US Economy Sectors](U.S. Government, 2007)

Each of these sectors includes many different subsectors, business types and companies. For example the sector manufacturing is divided into “Durable” and “Nondurable Goods” and these categories summarize subsectors like “Chemical Products”, “Wood Products”, “Motor Vehicles” and “Electrical Equipment”. This list is not complete and the total number of subsectors of the manufacturing sector is 19.
4. Introduction of the Sectors and Segments

For my diploma thesis I have chosen to focus on four different sectors or subsectors.

- The finance sector because of its huge influence on the development of the whole Subprime Crisis in the USA.

- The automotive industry as a subsector of the US economy, which was highly affected by the crisis. This subsector is a part of the huge manufacturing sector and it is linked to a high number of suppliers and other companies.

- Another focus will be put on the construction and housing subsector. This particular segment is also a part of the manufacturing segment with high impacts on many other parts of the US economy.

- And the last segment of the US economy, which will be examined, is the State, the Government and the Public. During the crisis the Government of the United States spent enormous sums of money to stabilize the markets and to protect the banking system. This money was generated by the tax payers and so every US citizen is paying for the failure of the economic system and therefore for the crisis.

In the following I will give an overview of these four parts of the US economy and present some basic data that is important to know when looking at the economical development.

In Chapter 5 a detailed analysis of these sectors and segments will be presented and the impacts of the Subprime Crisis will be shown.
4.1. Finance

The finance sector is one of the biggest and most important parts of the US economy. It also contains the insurance business. The yearly share of GDP related to this sector has been constantly rising from $741 billion in the year 2000 to $1.065 billion in the year 2008. (U.S. Census Bureau, 2009)

This sector was providing jobs for 5.835.000 people in the year 1997 and in the year 2005 this number has increased to 6.432.000 and continued rising to 6.563.000 in the year 2007. This enormous number of employees also explains why the breakdown of this whole sector had to be stopped by all means. Losing companies would also mean losing many jobs and it would also affect other parts of the economy as this sector provides funding for the whole US economy. (U.S. Census Bureau, 2009)

Due to latest predictions, the rise in the number of employed people will slow down in the next years. This can be explained by the impact of the Subprime Crisis on the sector. (U.S. Census Bureau, 2009)

It is a fact that some companies, that are members of this sector, triggered the Subprime Crisis by conducting very risky business. Therefore the Finance sector is also one of the most affected parties.

In the years 2005 and 2006 no bank or financial institution was forced to declare bankruptcy in the US. This changed in the year 2007 when the first omens of the upcoming Subprime Crisis appeared. (Agence France, 2009)

In the US, the FDIC\(^3\) is the responsible agency when it comes to the shutdown of a financial institution. Since the year 2000 152 US banks were registered with the FDIC to declare bankruptcy, 2 in the year 2000, 4 in the year 2001, 11 in the year 2002, 3 in the year 2003, 4 in the year 2004, none in the years 2005 and 2006, 3 in the year 2007, 26 in the year 2008, in the year 2009 the huge number of 99 banks were forced to shut down and even until February 2010 15 US banks were forced to declare bankruptcy. This development can also be seen in figure 9. (FDIC, 2009)

\(^3\) Federal Deposit Insurance Corporation
This extreme increase in the number of bank closures shows that the Subprime Crisis is not over yet. Even the impacts on the other sectors of the US economy have not reached their peak yet. (Pinckard, 2009)

To save the financial institutions and to cushion the impacts of the Subprime Crisis, the US government provided financial aids with a total volume of $700 billion to the companies. This was called the CPP⁴.

4.1.1. The CPP

The US department for treasury created the CPP in October 2008. Its goal was to provide fresh capital to financial institutions of all sizes in the US to stabilize the financial system.

The US government was willing to invest up to $250 billion in US banks that are healthy but require a little help to survive the crisis. To provide capital, Treasury purchases senior pre-

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⁴ Capital Purchase Program
ferred shares on standardized terms and charges 5% interest rates for the first five years of the investment and after that time 9% per year.

The CPP was used by many financial companies in the US and some of them were already able to repay the borrowed money. (Financialstability.gov, 2009)

More information on the attempts to stabilize the economy conducted by the US government will be provided in the detailed analysis of the governmental impact on the Subprime Crisis later in this thesis.

4.2. Automotive

During the last decades the automotive industry became an important subsector of the US economy. There are many different car and truck manufacturers located throughout the whole country. The centers of this industry are Detroit, Pittsburgh and Chicago.

Traditionally this subsector combines the manufacturing of motor vehicles, bodies, trailers and parts. The share of these industries to the GDP of the US has decreased from $118.1 billion in the year 2000 to $96.9 billion in the year 2006. (U.S. Census Bureau, 2009)

The decline in the volume of the automotive industry ascribed to the trend to buy gas saving and environmental friendly cars which are mainly produced by non US companies. Another reason for the decrease is the reduction in the general public willingness to spend.

In the year 2007 the automotive industry provided jobs to 1.636.000 people in the US. This might seem awkward, because of the relatively low number of employees. But what has to be taken into consideration is the fact that the production of “Transportation Equipment” is only a small part of the whole Manufacturing sector. The jobs that are directly offered by the automotive industry has to be added to the jobs that this industry creates with suppliers and with companies in other sectors. (U.S. Census Bureau, 2009)

In the past, car makers were able to secure their short-term loans with the predicted future sales. This is now blocked by the banks, because they expect the car sales of US companies to decline in a fast way and because of new loan granting policies. There are also huge problems
with outstanding payments of the car manufacturers. Some were already forced to declare bankruptcy and others are going to follow.

To save these important companies the US government has injected $17.4 billion into the three biggest car manufacturers GM, Chrysler and Ford. (Stoll & McCracken, 2009)

For the next years experts expect the situation of the US car manufacturers to stay very unstable. Most of the companies relied on outdated technologies and have missed the opportunity to develop green technologies. This leads to a competitive disadvantage compared to Japanese and German car makers.

4.3. Construction and Housing

The Construction and Housing sector is one of the biggest sectors of the US economy. It is directly and indirectly linked to nearly all other sectors of the economy.

The reduction in the prices for housing was one of the main reasons for the start of the Sub-prime Crisis in the US. When the prices for housing stopped to rise and started to decline, many people were not able to pay back their mortgages any more. Until this point it was totally normal to finance a new home with a mortgage on just this new home itself. This leaded to the so called housing bubble.

From the year 2004 to the year 2005 the number of employees in the housing and construction sector increased from 6.648.000 to 6.781.000. (U.S. Census Bureau, 2009)

Just before the beginning of the Subprime Crisis, the yearly number of new homes in the US reached its all-time-high with 1.636.000 in the year 2005. This number fell to only 1.218.000 new homes in the year 2007. And this number is expected to decline even more in the upcoming years. (U.S. Census Bureau, 2009)

Very interesting is the outstanding mortgage rate for housing in the US. In the year 1990 the total outstanding mortgage rates for housing were $ 2.621 billion Ten years later in the year 2000 this number has risen to $ 5.127 billion and continued rising to $ 11.136 billion in the year 2007. This explains the huge problems that came up, when the banks refused to secure
the mortgage for the new home with the new home and requested their money back immediately. (U.S. Census Bureau, 2009)

Concerning these facts it is very imaginable why the foreclosure rates increased in such an enormous way. When looking at the granted subprime loans and the financed homes the foreclosure rates reached a high of 11.7% in the year 2007. This number increased to nearly 20% in the year 2008. (U.S. Census Bureau, 2009)

The decrease in the willingness to spend of the US citizens also affected the maintenance and the refurbishing of existing homes. This is expected to lead to a decrease in the number of employees in this sector in the next years.

4.4. State, Government and Public

The funding of the Government and the whole country is based on money that has been raised through taxes and dues. It is used to invest in the economy as well into education, public infrastructure and other investments of public interest. Because of the subsidies awarded by the government for US banks, every US citizen is paying for this crisis even if he is not directly affected.

The US government is trying to reduce the negative impacts of the ongoing Subprime Crisis on the economy. Therefore huge sums are provided to stabilize banks, companies and to help home owners. These sums are granted in the form of subsidies. (Kitzmüller & Büchele, 2004)

The yearly amount of subsidies spent to different parts of the US economy exploded from an average of about $0.4 billion in the years 1990-2006 to $7.1 billion in the year 2007. And also in the following years the amount of subsidies was increased to stabilize the economy. This increase is shown in the figure 10.

One important thing, that has to be taken into consideration is, that the highest amount of requested subsidies can be observed in the years 2008 and 2009. For these years the numbers of offered subsidies will double or even triple. But there are no exact and official data available for the years 2008 and 2009 yet.
The Subprime Crisis also affected the credit rating for the different States of the USA. The following figure is showing the credit rating for the different States by the end of 2007. Today many of these ratings are even worse; today’s ratings are shown in figure 11.

Figure 14 – Subsidies spent by the US Government in the years 1990-2007 (U.S. Census Bureau, 2009)

Figure 15 – Ratings of the different US States in the year 2007 (U.S. Census Bureau, 2009)
The government also used money to stabilize the economy with the CPP. Intentionally the banks were keen on paying back the money lend by the State, to get rid of the governments influence. In June 2009 several banks were able to pay back over $68 billion. (Die Presse, 2009)

Due to the huge amount of money pumped into the market and the reduction of tax revenues because of the decreasing willingness to spent, the public debts increases. For this year the US government expects a gross debt in $ billions of 12,867.5 this represents 90.4% of the GDP of the United States of America. Until the year 2014 the amount of debt is expected to raise to $18,350 billion what is equal to 99.8% of the GDP. (Office of Management and Budget, 2009)

A more detailed discussion of the development of the US gross debt will be conducted in the next chapter.
5. Detailed Analyses

5.1. Classification Criteria

To determine if a sector or a market player was a winner or a looser of the Subprime Crisis I will compare the performance before and after the crisis.

In most of the cases this will be a very difficult thing to do, because of the changed market circumstances. Many companies have left the markets and so the numbers are not really representative any more. In those cases I have chosen to evaluate if the remaining companies will be able to realize a competitive advantage in the future due to the happenings during the crisis.

In the following a detailed analysis of every chosen sector or segment of the US economy will be conducted and an estimate about the impacts of the Subprime Crisis on this particular sector will be done.
5.2. Finance

The US Finance Sector is a heavily segmented one as it also contains the insurance companies. The largest part of this sector is represented by various banks with 61%; the total composition of the Finance Sector can be seen in figure 12.

The dominant position of banks in this sector is the reason why I will mainly focus on the impacts of the crisis on banks.

US banks were the trigger of the Subprime Crisis in the year 2007 and these companies were also heavily affected by the crisis. Figure 13 shows the development of bankruptcies over the last years.
As we can see from the figure above the number of bankruptcies of US banks reached a number of 140 in the year 2009. This means that 140 financial institutions of all sizes were forced to declare bankruptcy in the year 2009 as a direct result of the Subprime Crisis in the USA.

This development is also reflected in the development of the US Financial Sector at the New York Stock Exchange. This development over the last five years is shown in figure 14.

![Figure 17 – Bankruptcies of US banks (self constructed)](image)

![Figure 18 – Development of the financial sector at NYSE (NY Stock Exchange, 2009)](image)
The Subprime Crisis and the following collapse of the US Financial Sector are very visible in this NYSE chart. In the year 2009 the index dropped to almost 2,000 points from nearly 10,000 points in the year 2007.

This decline in the value of the US financial sector caused a huge damage to the US economy and as a result many people lost their houses and jobs. Experts estimate that the total loss of public wealth cumulates to $1.3 trillion. (Luhby, 2009)

This loss of public welfare is one huge problem itself, but another problem is the lost trust in the financial system by large parts of the public. In the year 2008 the Americans pulled back their borrowing by 1.1%. The consumer credit dropped at an annual rate of 3.5% which was the largest dip in the last 35 years. This decline can be explained by the slowed down use of credit cards and auto loans. (Luhby, 2009)

But also US businesses decreased their borrowing by 0.3%, which was the first time since 1992. At the same time the US government increased its borrowing by 22.6% in an attempt to stabilize the economy. The federal debt increased by 39.2% in the third quarter of the year 2008 and by 37% in the fourth quarter. (Luhby, 2009)

But there is also another side to the story. As the figure 14 shows, the NYSE Financial Sector doubled its worth since the year 2009. Many investors were able to make a fortune by investing when the prices of shares were low. Of course these profits were only possible, because of the fact that other people and institutions lost massively during the crisis.

It will take the US economy approximately three to five years to fully recover from the crisis. And afterwards the structure of the US economy will be significantly different. (Demyanyk & Van Hemert, 2008)

For the remaining companies the market conditions are very different. This becomes very visible if we look at the fact, that during the crisis the US Company JPMorgan overtook the struggling competitor Bear Sterns. Also another competitor of JPMorgan Lehman Brothers was forced to declare bankruptcy.

In the wake of the crisis Morgan Stanley agreed to join its brokerage department with Citygroup. The new company will be called Morgan Stanley Smith Barney and is expected to be the largest US investment company with more than 20,000 brokers.
These happenings reduced the number of market players significantly and will leave the remaining companies in a stronger position in the future. This is just one isolated example of changed market circumstances after the crisis and a case of an advantage because of the crisis.

The following figure 15 shows the performance of 13 large US bank stocks in the year 2009 in percent of total return.

As we can see some of the banks were able to increase their return significantly. For example JPMorgan Chase was able to increase its profit in the year 2009 by 19.70%. Also the Fifth Third Bank increased its profit by 18.50% in the year 2009. (NY Stock Exchange, 2009)
These companies were able to close substantial deals or to merge with competitors and to expand their market shares. But another thing what can be seen in this figure is that the number and volume of the increases in return cannot hold up with the decreases of returns.

So the overall impact of the crisis on the US financial sector is negative. For example the 2009 return of Citibank decreased by 50.50%, followed by KeyCorp by a reduction of 33.80% and Regions Financial that had to cope with a decrease of return of 31.90%. (NY Stock Exchange, 2009)

The upcoming development of this sector is very interesting, because of the fact that the total number of banks and financial institutions has been reduced significantly. The remaining companies will have fewer competitors and therefore a higher bargaining power.

Recently experts are again reporting an increasing willingness to invest into risky financial products which could lead to a new crisis in a few years. (Feldstein, 2009)
5.3. Automotive

The automotive sector is also heavily affected by the Subprime Crisis. Due to the fact that people were forced to reduce their consumptions the number of cars licensed declined significantly.

In April 2009 the total number of cars sold dropped by more than 34% and left the whole industry shocked. But even this disastrous numbers were better than the March figures, where the total sales were reduced by 37%. (Goldmann, 2009)

When looking at the whole year 2009 the number of cars sold was expected to decrease by 13% which would result in the lowest sales figures in 27 years in the US. (Carey & Bailey, 2009)

These bad numbers caused enormous problems for some car manufacturers. Especially Chrysler and GM got into serious financial troubles and were forced to sell parts of the company or even to declare bankruptcy.

One thing that is important to understand when looking at the US car market is, that this particularly market is directly linked to various other US sectors and branches. Due to this fact the number of jobs at stake cannot be emphasized enough.

Because of this the US government helped the US companies with huge sums of money in order to stabilize the industry and to safe the jobs. Therefore the American Recovery and Reinvestment Act of 2009 was approved. It will be discussed in detail later on.
5.3.1. Composition of the US Car market

The US car market mainly consists out of the so called “Big Five” these five dominating companies are GM, Ford, Chrysler, Toyota and Honda. The development of the market shares of these five companies is shown in the following figure 16.

Figure 20 – Market shares of the five biggest companies on the US car market (Motorintelligence, 2009)

What can be seen from this figure is that the volume of cars sold by US car companies declined continuously since the year 1999 until today. Especially GM and Ford lost a large part of their market share.

The US government tried to stabilize the market by offering vouchers worth $1.500 to $5.000 for car owners that were willing to purchase a new vehicle and to sell their old gas guzzling cars. (Goldmann, 2009)

At the end of the year 2009 it seemed that all affords showed good results, with higher sale numbers in December 2009 than in December 2008. This development can be seen in the following figure 17.
What is clear when looking at the figure is, that no part of the US car market was able to increase or even to hold its level of 2008. The share of midsize SUVs declined by 45.7% followed by the share of large cars that declined by 33.0%.

Nearly all segments of the US car market showed a two digit decline over the last year.

But there is also a positive development observable. The sales figures of the December 2009 were partially higher than the numbers of the December 2008. This development can be explained by the financial aids that were offered to the car makers and the public by the US government.

There is also another important thing that has to be taken into consideration when looking at causes for the huge problems of the US car manufacturers. These companies relied on gas guzzling cars that are very expensive when it comes to the upkeep for a long time. Such cars were ignored by the buyers when there is less money to spend.
When taking a close look at the comparison of the December 2008 and December 2009 figures it becomes clear that especially the foreign car manufacturers were able to generate an advantage out of the crisis. This can be seen in the figure 18.

<table>
<thead>
<tr>
<th></th>
<th>Dec 2009</th>
<th>Dec 2008</th>
<th>% Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cars</td>
<td>78,831</td>
<td>88,702</td>
<td>-9.3</td>
</tr>
<tr>
<td>Domestic Car</td>
<td>75,272</td>
<td>84,445</td>
<td>-10.9</td>
</tr>
<tr>
<td>Import Car</td>
<td>3,359</td>
<td>2,257</td>
<td>48.8</td>
</tr>
</tbody>
</table>

Figure 22 - Detailed comparison of Dec 2009 and Dec 2008 sales figures (Motorintelligence, 2009)

This figure clearly shows that the number of imported cars increased by 48.8% and the number of domestic cars sold decreased by 10.9%.

The non-US car manufacturers were able to increase their market share by 3.5% as it can be seen in figure 19.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cars</td>
<td>50.3</td>
<td>47.4</td>
<td>52.7</td>
<td>51.2</td>
</tr>
<tr>
<td>Domestic Car</td>
<td>16.2</td>
<td>16.8</td>
<td>16.2</td>
<td>17.4</td>
</tr>
<tr>
<td>Import Car</td>
<td>34.1</td>
<td>30.6</td>
<td>38.5</td>
<td>33.8</td>
</tr>
</tbody>
</table>

Figure 23 – The market shares of domestic and import cars (Motorintelligence, 2009)

These market shares only show the car market in the US the truck market is not included in these figures. This decline in the market share of the domestic cars is a huge problem for the US car manufacturers.
Especially Chrysler was so heavily affected by the Subprime Crisis and by the reduction of cars sold, that it had to declare bankruptcy in the year 2009. The following figure 20 shows the development of the Chrysler LLC share over the last five years.

Figure 24 – Chrysler LLC Chart (NY Stock Exchange, 2009)
The next figure 21 shows the development of the sales of Chrysler cars over the last 10 years, also these figures show the steady increasing problems of this company.

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. Sales</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>2,638,561</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>2,522,695</td>
<td>-4.4%</td>
</tr>
<tr>
<td>2001</td>
<td>2,273,208</td>
<td>-9.9%</td>
</tr>
<tr>
<td>2002</td>
<td>2,205,446</td>
<td>-3.0%</td>
</tr>
<tr>
<td>2003</td>
<td>2,127,451</td>
<td>-3.5%</td>
</tr>
<tr>
<td>2004</td>
<td>2,206,024</td>
<td>3.7%</td>
</tr>
<tr>
<td>2005</td>
<td>2,304,833</td>
<td>4.5%</td>
</tr>
<tr>
<td>2006</td>
<td>2,142,505</td>
<td>-7.0%</td>
</tr>
<tr>
<td>2007</td>
<td>2,076,650</td>
<td>-3.1%</td>
</tr>
<tr>
<td>2008</td>
<td>1,453,122</td>
<td>-30.0%</td>
</tr>
<tr>
<td>2009</td>
<td>931,402</td>
<td>-36.0%</td>
</tr>
</tbody>
</table>

Figure 25 – Development of Chrysler sales figures - (Motorintelligence, 2009)

No company is able to stay on the market if the sales are dropping by 30% and 36% in two following years. Despite these facts the US government tried desperately to save Chrysler from going bankrupt. But in the end the help did not pay off and Chrysler was forced to declare bankruptcy.
5.4. Construction and Housing

The US real estate market was another segment which was heavily affected by the Subprime Crisis. This part of the US economy was not only influenced by the crisis itself as the financing and the money flow stopped rapidly, it was also affected by a bunch of other factors.

The most important problem for this segment was the fact that on one side people lost their jobs when the economy crashed and because of this they were not able to pay back their housing loans any longer. On the other hand banks restricted the granting of new credits and so many households were no longer able to pay for their homes.

This resulted in a massive increase in the number of foreclosures in the US as can be seen in figure 22.

Figure 26 - Number of home foreclosures in the US in the year 2009 (Nationaljournal, 2009)
From January 2009 until July 2009 the number of foreclosures rose from about 275,000 to over 350,000 per month. This created a lot of problems for the whole economy because the government also had to think of a way to help families who have lost their homes.

All over the US, banks claimed their money back and people failed to repay their mortgages. But the number of foreclosures was not equally divided among the different States of the USA. Figure 23 shows the allocation of foreclosures in the USA in April 2009.

![Figure 27 – Allocation of foreclosures in the US in April 2009 (Pinckard, 2009)](image)
In April 2009 96,560 filings for foreclosures were counted in the State of California when on the other hand only 10,830 foreclosures were registered in the State of Michigan. For the people in California this numbers were the peak of a huge problem that had already begun in the year 2008 when the number of filings for foreclosure started soaring. This development can be seen in figure 24.

![Foreclosures in Los Angeles County 1992-2008](image)

Source: CA Association of Realtors

Figure 28 – Foreclosures in Los Angeles (CA Association of Realtors, 2009)

With a traditionally high number of filings for foreclosure the State of California and especially Los Angeles County was confronted with a new all time record of people losing their homes.

After a period of many foreclosures in the years 1993 to 1998 the numbers dropped to nearly zero in the years 2002 to 2006.
But when the Subprime Crisis fully started at the beginning of the year 2007 the number and volume of foreclosures increased dramatically. Numerous families lost their houses and had to purchase cheaper property or look for a different place to stay.

The main reason for the ascent of foreclosures was the decline in the value of housing. This problematic development started a few months before the boost in fillings for foreclosures can be observed. When looking at figure 25 this becomes very clear.

Figure 29 – Development of US House Prices (Parson, 2008)

This figure shows that the value of houses in the US reached an all-time-high in the year 2006 shortly before the start of the Subprime Crisis. During the year 2006 and 2007 the prices for property fell dramatically and reached a bottom in the year 2008 that was at the level of the year 2001.
With mortgages secured by the property itself, such a decline in property value was a dramatic problem for home owners. But not only home owners were affected by the loss in housing prices. After the completed foreclosure process, the property is owned by the bank that published the mortgage. But with hundreds of thousands of homes new on the market the decline of housing value could not be stopped. Because of this fact, many banks decided to demolish many newly owned homes to stabilize the market.

At the end of the year 2008 this strategy seems to pay off, as housing prices started to rise again. But the market is not stabilized yet. This becomes obvious when looking at the short term development of housing prices in different US States. The following figures 26 and 27 show the development of US housing prices in the third quarter of 2009 compared to the fourth quarter 2009.

<table>
<thead>
<tr>
<th>City, State</th>
<th>Avg. Home Sales Price</th>
<th>Quarterly % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oakland, MD</td>
<td>$295,806</td>
<td>70.98 %</td>
</tr>
<tr>
<td>Conneaut, OH</td>
<td>$101,517</td>
<td>75.67 %</td>
</tr>
<tr>
<td>Hazel Crest, IL</td>
<td>$96,737</td>
<td>73.09 %</td>
</tr>
<tr>
<td>East Hampton, NY</td>
<td>$1,227,816</td>
<td>64.61 %</td>
</tr>
<tr>
<td>Palm Beach, Fl.</td>
<td>$952,000</td>
<td>63.93 %</td>
</tr>
<tr>
<td>Maple Heights, OH</td>
<td>$41,748</td>
<td>62.86 %</td>
</tr>
<tr>
<td>Harrison, OH</td>
<td>$209,866</td>
<td>61.38 %</td>
</tr>
<tr>
<td>Kailua, HI</td>
<td>$1,861,339</td>
<td>60.13 %</td>
</tr>
<tr>
<td>Seneca, SC</td>
<td>$257,955</td>
<td>59.46 %</td>
</tr>
<tr>
<td>Park Rapids, MN</td>
<td>$214,271</td>
<td>58.69 %</td>
</tr>
</tbody>
</table>

Figure 30 – Development of housing prices Q3/09 vs Q4/09 (Realtytrac, 2010)
These figures clearly show that the realty market in the US has not stabilized yet. A decline of 66.59% in average housing value in Saint Luis in one quarter is not reasonable. On the other side the properties in Oakland have increased their value by 79.98% in the same period of time.

<table>
<thead>
<tr>
<th>City, State</th>
<th>Avg. Home Sales Price</th>
<th>Quarterly % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saint Louis, MO</td>
<td>$37,594</td>
<td>-56.59%</td>
</tr>
<tr>
<td>Taft, CA</td>
<td>$24,882</td>
<td>-54.08%</td>
</tr>
<tr>
<td>Palo Alto, CA</td>
<td>$281,661</td>
<td>-51.65%</td>
</tr>
<tr>
<td>Mount Morris, MI</td>
<td>$14,146</td>
<td>-50.46%</td>
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<td>Maitland, FL</td>
<td>$91,233</td>
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Figure 31 – Development of housing prices Q3/09 vs Q4/09 (Realtytrac, 2010)
When the prices of US property reached rock bottom in 2008, investors from all over the world travelled to the USA and bought houses, flats and land. And also US investors were able to generate a profit out of this situation. This is the other side of the decrease in housing value, if investors were able to buy property at low prices they are now able to profit from the rising prices. And the prices are expected to keep rising as the newly published Case-Shiller National Home Price-Index shows. (Figure 28)

Figure 32 – Shiller National Home Price Index - (NY Stock Exchange, 2009)

The sunken willingness and possibility to plan and build a new home can also be seen in figure 29.
This figure clearly shows that until the end of the year 2006 the construction of homes literally collapsed. The number of new homes built dropped to about 600,000 in the whole USA in the year 2009.

This development caused severe problems throughout the whole US economy and showed the danger of the Subprime Crisis. To increase the number of new homes constructed, the US government awarded large funds. This will be discussed in detail in the next chapter of this thesis.
5.5. State, Government and Public

The US Government plays a key role in the Subprime Crisis and its development. It was the politics that introduced the system of mortgages and the possibility to secure a housing loan with only the property itself.

In this crisis the governments all around the world and especially the US government reacted in a way that never has been seen before. Huge sums of money were provided to protect financial institutions from going bankrupt. The government itself was willing to risk its financial stability and to levy higher taxes on the public to rescue banks, jobs and homes.

Especially after the year 2007 the US government pumped enormous sums into the financial market and bailed for the risky loans of banks and insurance companies. This resulted in a huge increase of debt owned by the United States. This can be seen in figure 30.

![Graph showing debt added in the US](image)

**Figure 34 – Debt added in $ billion (Office of Management and Budget, 2009)**

From the year 2007 to the year 2008 the US government had to increase the yearly added debt from $459.5 billion to $1,017.0. It is obvious that such an increase in newly added debt causes
massive problems to an economy. This burden will affect future generations and will prevent changes in the healthcare system and tax reliefs.

To underline the problems that might occur in the future because of these huge new debts it is important to look at the newly added debt in percent of the GDP. This is shown in figure 31.

Figure 35 – Debt added in % of GDP (Office of Management and Budget, 2009)

In the year 2007 the value of debt added in percent of GDP was only 3.4%. But this value increased in the wake of the Subprime Crisis to a shocking value of 7.4%. This means that in the year 2008 7.4% of the whole GDP where added as new debts.

These figures are expected to rise even more in the year 2009 as the US government again provided enormous sums of money to the markets. Experts are already warning because of the huge total debts that the US is piling up. This becomes clear when looking at figure 32 that shows the gross debt until today and the official projected values until the year 2014.
Again these figures are showing that until the year 2007 the debts started to pile up. The values rose from $8,950.7 billion in the year 2007 to $9,985.8 billion in the year 2008 and are expected to explode to $12,867.5 billion in the year 2009.

Until the year 2014 the US government is planning to increase the gross debt of the USA to $18,350.0 billion. This would represent a doubling in gross debt from the today’s values. And even today experts are warning that the US is caught in its debts and has to expect future problems because of the large amount of money owed. It is also interesting to take a look at the gross debt of the US in percent of the GDP, in figure 33.
In the year 2007 the gross debt was at 65.6% of the GDP which is a value that has not really changed since the year 1990. After the year 2007 this figure started to increase. In the year 2008 the gross debt was already 70.2% of the GDP and the US government is planning to increase this number to 90.4% in the year 2009 and until the year 2010 the gross debt is going to be 98.1% of the GDP.

5.5.1. The American Recovery and Reinvestment Act of 2009

In the year 2009 the US president Barack Obama presented the American Recovery and Reinvestment Act of 2009. The purpose of this economic stimulus package was to support the US economy and to provide money to States, financial institutions and banks. It replaced the Economic Stimulus Act of 2008, the Emergency Economic Stabilization Act of 2008 and the Troubled Asset Relief Program.

The full value of this act was $787 billion and with this money the government wanted to create new jobs and save existing ones, stimulate the economy and invest in long-term eco-
economic growth and finally make governmental spending more transparent in the future. (Recovery.gov, 2010)

To achieve those goals the Recovery Act is equipped with a total of $787 billion which will be split among different parts of the economy in the following way:

- $288 billion for tax cuts and benefits for workers and employees
- $224 billion as an increase of federal funds for education and health
- $275 billion for federal contracts, grants and loans (Recovery.gov, 2010)

All institutions, companies or other parties that are receiving money out of the budget of the Recovery Act are requested to report quarterly on the amount of money they have actually spent.

Figure 34 shows the allocation of the money provided by the Recovery Act in the USA.

![Figure 34 – Allocation of the money provided by the Recovery Act (Recovery.gov, 2010)](image_url)

This official allocation map shows that most of the money awarded has not been spent yet and it also shows which of the US States were mostly affected by the Subprime Crisis and therefore received most of the money.
For each State the US government provides exact data about the funds awarded and the funds that were actually received. It also shows the number of jobs created by using the funds of the Recovery Act.

Figure 35 shows the precise rundown for the State of California. As this State was one of the most affected regions in the US it was also awarded a large share of the money provided by the Recovery Act.

![Image](image_url)

Figure 39 – Rundown for the State of California (Recovery.gov, 2010)

The American Recovery and Reinvestment Act of 2009 awarded California with a total of $18,534,840,000 and until the end of January 2010 already $8,180,540,000 were received by the State. This money was used to stimulate the economy of California and it was also used to invest in the infrastructure.

Until the end of January 2010 110,185 jobs were created in the State of California. What is important is that every job created since the American Recovery and Reinvestment Act of 2009 was approved, is counted as established by this Act. Today’s total number of jobs created since the approval of this Act is 640,329.

By the end of the year 2008 the US Fed has spent nearly the half of its yearly budget of about $1 Trillion on measurements to reduce and neutralize the impact of the Subprime Crisis on the global and especially on the US economy. (Cecchetti S., 2008)
But even these affords to reduce the rate of unemployment are not able to really prevent more and more people from losing their jobs. The development of the US labor market can be seen in figure 36.

![Figure 40 – US rate of unemployment in percent (Forecasts.org, 2010)](image)

This figure shows the development of the US rate of unemployment from December 2007 until the projected values at the mid of 2010.

Shortly after the beginning of the Subprime Crisis, the labor market got highly affected. Many companies were forced to declare bankruptcy or even to get rid of employees to secure their survival. This resulted in a steep increase of unemployed workers. The unemployment rate rose from 5% in March 2008 to over 10% in October 2009. (Office of Management and Budget, 2009)

The US government claims, that the stabilization of the unemployment rate at about 10% is just because of the money provided by the Recovery Act. This is highly doubted by experts. (Feldstein, 2009)
But shortly after the announcement that the US government will help States, companies and other parties that got into trouble because of the Crisis, experts warned that this could encourage risky investments.

For many brokers the investments into high risk subprime mortgages, which ultimately triggered the crisis, payed off and generated a profit. When the Subprime Crisis hit the markets these profits could mostly not be reclaimed by the government or other affected parties. (Stiglitz, 2008)

Contra vise the US government rescued many banks that triggered the crisis and therefore the politics helped the profiteers to survive. But what has to be kept in mind is that all the money a government spends is the population’s money. So in the end everybody is paying for the crisis. The people that were able to generate profit out of the subprime loans before the crisis were mostly able to keep this money and also to stay in business.

Some of the brokers that were responsible were forced to change the company they are working for, but in the end they are now again working for financial institutions. As a prominent example, it is surprising to see, that nearly all former employees of Lehman Brothers are now working for the Japanese investment bank Nomura. (Kanning, 2009)

To prevent such crisis in the future, many countries approved on higher standards for the trade of loans and other risky financial products. But as experts state, these laws and standards are too loose and are not able to restrict the trading efficiently. It is also very doubtful, that new rules are able to stabilize the markets on a long term basis.
6. Concluding Remarks

In the wake of the Subprime Crisis the US government and many other governments all around the world prevented a large number of companies from going bankrupt.

The companies were given large sums of money, tax reliefs and other aids. By doing this the governments tried to save and create jobs, rescue companies and stabilize the economy. Through these actions even companies that were responsible for the crisis were saved from going bankrupt and from taking responsibility for their actions.

Experts state that because of The American Recovery and Reinvestment Act of 2009 companies are encouraged to keep on investing into profitable but risky financial products. As Harvard University professor Martin Feldstein explained in a recent interview, a new crisis could be expected in the year 2011. (Feldstein, 2009)

The key to prevent such Crisis to repeat in the future is finding the right balance between rules, regulation, laws and free trade. An over-regulation is also able to cause damage to the economy of a country and should be therefore avoided. (Cecchetti S., 2007)

Another important factor for the prevention of such Crisis in the future is the willingness of all involved parties to accept and respect the applied rules and regulations.

It is a fact that financial institutions, governments and even individuals are always trying to bend the existing rules and to find weak spots and take advantage. So as a first result to every regulation applied, aid awarded or new law created the companies try to adept. As long as companies are not realizing the importance of regulatory measurements a new crisis cannot be avoided. (Cecchetti S., 2007)

In his opinion the excessive help for troubled companies is creating a false feeling of safety and the confidence that if a company can take any kind of risk because in the end the government will stand up for it. (Feldstein, 2009)

And in fact many companies are not afraid of taking high risks and keep on investing even into high risk equities.

In the end the price for this crisis will be paid by millions of tax payers around the world. But most of the people that can be held responsible for the developments around the topic of sub-
prime mortgages will keep on working in their old jobs. A prominent example for this development is the fact that nearly all employees of the collapsed bank Lehman Brothers were recruited by the Japanese bank Nomura. (Kanning, 2009)

Many parties can be specified as losers of the Subprime Crisis. They have lost their jobs, lost their pension funds, lost money that was invested in shares or lost their home because it has been foreclosed. The government is also a loser of the crisis because it will take loads of money to restore an economic balance and to reach the level of welfare before the crisis began.

But whenever there are losers there are also winners. And in this case banks, individual investors and other parties can be marked as profiteers.

When looking at the banking sector it is quite obvious, that the burden of the Crisis is not equally allocated between the responsible parties. The US government and many other governments all around the world awarded the financial sector with huge sums of fresh capital. Therefore the companies that caused the housing bubble and ultimately triggered the Subprime Crisis were often able to stay on the market and keep conducting business.

Many brokers and managers that have decided to invest into risky financial products such as subprime mortgages were able to keep their bonuses and other payments. All of the banks that have survived this Crisis are now able to levy a high bargaining power onto the market, because they got rid of many competitors during the Crisis.

The automotive sector was severely hit by the crisis and many big car manufacturers in the US and worldwide was only able to survive because of the financial support awarded by the governments. With this aids even unprofitable companies were able to stay on the market and to blame the Subprime Crisis for their bad sales figures. But when we take a close look at the numbers of imported and domestic cars sold, it is obvious that the US car makers have also lost much of their appeal to the buyers even before the Crisis. (Stiglitz, 2008)

As the housing sector was also one of the triggers of the Subprime Crisis, it was confronted with some of the most radical consequences. Banks requested their money back, new mortgage granting policies were applied and many people lost their homes. But this was no surprising development for many experts. Because the way of securing a mortgage on a new home with the property itself and the fact that everybody relied on an increase in housing value had to lead to a collapse of the whole system sooner or later.
In the end, everybody in the US and worldwide will be paying for this crisis. The governments rescued companies and put large sums of tax money at stake. Reforms of the tax systems, the healthcare systems or even future investments into the infrastructure will be very problematical because of the debts that are piling up. (Schäfer, 2008)

And again experts are warning that companies and banks have not learned much out of this Crisis and keep on doing risky business. Many rules of the markets were ignored when unprofitable companies were rescued and the consequences of these actions will be visible for many years.
List of Literature


Appendix

Summary

The Subprime Crisis was the most severe economical crisis since the Great Depression in the year 1929. It affected the whole US economy in less than two years and in this time unbelievable amounts of public welfare were destroyed.

There are many reasons for the development of this Crisis. On the one hand financial institutions tried to maximize their profits by investing into high risk equities. These financial products, for example subprime mortgages, were very profitable but also contained a possibility to default.

Another reason was the development of the Housing Bubble. Before the Subprime Crisis it was perfectly normal to back a housing loan only with the new property itself. A guaranteed increase in the value of this new home was considered sure. When the housing prices started to decline these loans were not properly backed anymore and many families were not able to pay the money back.

This ultimately resulted in the collapse of many banks all over the world and especially in the US. These shut downs caused problems lead to many problems because people also had to decrease their general spending.

Due to this reduction in money spent all other parts of the US economy were affected and a downward spiral begun to turn. The number of unemployed people and the number of home foreclosures rose extremely.

In an afford to stabilize the economy, the US government approved the American Recovery and Reinvestment Act of 2009 which provided the markets with over $700 billion. This money was used to create new jobs, invest into education and the infrastructure and to rescue companies from going under.

The government also protected many banks and financial institutions that were partially responsible for the Subprime Crisis. Therefore the managers and brokers that made the risky and later defaulting investments were able to continue working in this sector.
Zusammenfassung

Die Wirtschaftskrise in den USA stellte die größte Bedrohung für die Weltwirtschaft seit der großen Depression aus dem Jahre 1929 dar. Die gesamte Wirtschaft der USA und nahezu aller Staaten der Erde sind von ihr betroffen.

Für die Entstehung der Krise gibt es viele Gründe. Auf der einen Seite waren hochriskante Geschäfte vieler Banken und Versicherungen ein Auslöser. Diese Firmen investierten in Anlageformen die zwar hoch profitabel waren, welche jedoch aber auch einen hohe Ausfallswahrscheinlichkeit beinhalteten. Vorranging waren die Investments in so genannte Subprime Mortgages der entscheidende Faktor für die Entstehung der Krise.

Ein anderer Auslöser war die so genannte Housing Bubble. Bis zum Ausbruch der Krise war es für US Banken selbstverständlich Hausbesitzern einen Kredit für ein neues Bauprojekt zu geben, wenn als Sicherheit lediglich das neue Haus selbst bereitgestellt wurde. Als sich aber die Grundstückswerte und Hauspreise zu senken begannen kollabierte dieses System, da ein sicherer Zuwachs des Grundstückswertes als sicher angesehen wurde. Dadurch stellten Banken die Kredite sofort fällig und die Hausbesitzer konnten die Kredite nicht mehr zurückzahlen.

Diese Ausfälle von Krediten führten zum Zusammenbruch vieler Banken in den USA und auf der ganzen Welt. Dies löste jedoch eine Kettenreaktion aus, die sich durch das gesamte wirtschaftliche System ausbreitete.

Die Menschen verringerten ihre Ausgaben und so wurden auch andere Teile der Wirtschaft der USA von der Krise erfasst. Autohersteller sahen sich mit sinkenden Absatzzahlen konfrontiert und mussten Arbeiter entlassen.


Mit diesem Programm wurden allerdings auch viele Banken gerettet, die teilweise für die Krise mitverantwortlich gemacht werden können.
Curriculum Vitae

Personen Daten

Name Florian Moosbeckhofer
flo-mo@gmx.at

Geburtsdatum und Ort 16.04.1984
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Familienstand ledig

Ausbildung

10/2004 – heute
Studium an der Universität Wien
- Internationale Betriebswirtschaft

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Zivildienst beim Wiener Roten Kreuz
- Ausbildung zum Rettungssanitäter

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Handelsakademie – Pernerstorfergasse
- Abschluss mit Matura

1994 – 1998
Gymnasium – Pichelmayergasse

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Deutsch Muttersprache
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Italienisch Grundkenntnisse

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Staatlich geprüfter Rettungssanitäter
Cambridge BEC Higher – Grade B
TOEFL-Test 105 von 120 Punkten

Hobbies

Reisen
Laufen
Lesen
Tennis

Diverses

2 Jahre Schulsprecher in der HAK
bisherige berufliche Tätigkeiten

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