The Financial crisis in Europe and the United States in 2007-2010

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Tämä opinnäytetyö käsittelee 2000 luvun lopun finanssikriisiä. Opinnäytetyö on rajattu ajallisesti vuosiin 2007–2010 ja maantieteellisesti se keskittyy Eurooppaan ja Yhdysvaltoihin, mutta ottaa kantaa myös kriisin globaaleihin vaikutuksiin. Työn tarkoituksena on rakentaa kattava yleisnäkemys kriisin taustatekijöistä, eri vaiheista ja toimenpiteistä tilanteen helpottamiseksi, sekä muodostaa käsitys kriisin pidempiaikaisista vaikutuksista sekä valtioiden tasolla että institutionaalisella tasolla.

Työ on toteutettu kvalitatiivisena tutkimuksena. Työn ensimmäisessä osassa käsitellään finanssimarkkinoiden toimintaa, perusperiaatteita, instituutioita ja niiden funktioita finanssimarkkinoilla sekä pyritään selventämään tutkittavaa kriisiä ilmiönä. Työn toinen osa perustuu uutisartikkeleista, asiantuntijoiden haastatteluista, blogeista ja kirjallisuudesta kerättyyn tietoon ja keskittyy selittämään syitä, vaikutuksia sekä keskuspankkien toimenpiteitä kriisin lopettamiseksi.

Keskeisimpinä tuloksina todettiin kriisin vaikuttaneen ensisijaisesti pankkien likviditeettiin ja riskienhallintaan ja sitä kautta reaalitalouden toimintaan. Tärkeimpiä syitä kriisikypsän tilanteen syntymiselle olivat alhainen korkotaso, maksutaseiden epätasaisuus eri maiden välillä ja finanssimarkkinoiden rakenteelliset ongelmat. Korkotason noustessa arvopaperillistetut sub-prime lainat aiheuttivat massiivisia luottotappioita jotka aiheuttivat epäluottamusta Interbank -markkinoilla ja vaikeutti varainhankintaa. Valtiot pyrkivät auttamaan häiriintynyttä markkinaa laskemalla viitekorkoja, tarjoamalla rahaa ja lunastamalla myrkyllisiä varoja pankkien taseista pois.

Kriisin seurauksena maailmantalous kääntyi laskuun ja useat valtiot joutuivat taantumaan. Taantuma levisi lopulta myös reaalitalouteen. Maailman omistus- ja valtarakenteet ovat muuttuneet myllerryksen aikana ja valtiot ovat joutuneet maksumiehiksi. Muun muassa Yhdysvaltojen talous on joutunut vararikon partaalle ja markkinoiden stimulointiin käytetyt varat ovat jo synnyttäneet uusia kuplia. Tulevien ongelmien välttämiseksi edessä on valvonnan ja sääntelyn kehittäminen sekä kannustimien käytön vähentäminen.

Asiasanat finanssikriisi, pankki, sub-prime, likviditeetti, pääoma

Laurea University of Applied Sciences **Abstract**
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This thesis deals with the financial crisis that occurred in the late 2000's. It focuses on the years 2007-2010 and geographically on the United States and Europe but also takes into account its global effects. The thesis aims to build a comprehensive view on background factors, phases of the crisis and measures taken to resolve the situation. It also aims to construct an understanding of the long-term effects at a national level as well as at an institutional level.

The study has been carried out as a qualitative study. The first part explains how financial markets work, basic principles, institutions and functions of those within the market and tries to explore crises as a phenomenon. The second part is based on news articles, expert interviews, blogs and literature. It focuses on explaining the reasons behind the crisis, effects and central banks activities to ease the situation.

The main results of the study found that liquidity problems within the banks caused an inability to sustain risk management and from there the crisis spread to the whole economy. The main reasons the crisis occurred were low interest rates, imbalances in current accounts and structural problems within the financial market. When interest rates rose the securitizated sub-prime loans defaulted and caused mistrust within the Interbank market complicating funding. Governments tried to intervene by lowering interest rates, offering funding and buying the toxic assets from the banks' balances.

As a result of the crisis the world economy declined and many governments entered recession. Eventually the crisis spread to the real economy. Ownership and power structures of the world have changed during the turmoil and the governments have been forced to foot the bill. Among other countries the United States' economy is on the brink of bankruptcy and stimulus packages have already created new bubbles. To avoid future problems the supervision and regulation of financial markets needs to be tightened as well as reducing the use of incentives.

Keywords financial crisis, banking, sub-prime, liquidity, capital

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1 Introduction

This thesis aims to explain and understand the financial crisis that took place in 2007-2009. The thesis views also events in 2010 and the aftermath of the crisis; what is the effect the stimulus packages have had on the economy and have the remedies been effective. The study takes a stand on what the situation is now and how will the crisis occur and influence in the future, how have past events altered the way governments and people react to financial institutions and problems within those.

The study in this thesis is a qualitative study, which is trying to explain the situation and the effects of the crisis. The information is mainly gathered from news and reports on the issue. Because the subject is so important to many institutions and it could be said to people living in the countries suffering from the crisis and affected by it in some way, there was a lot of information available.

In this thesis the first part will explain the phenomenon and the functions of different parties involved. It also aims to acquaint the reader with the vocabulary needed to understand the subject. The second part focuses on explaining reasons behind the crisis, affects in the United States and in Europe, and attempts to relieve the situation at the time, the current situation and prevention of future problems. The thesis is mainly focused on the United States and on Europe but because of the international nature of the crisis it is logical to examine the global situation too.

2 Introduction to financial market

The financial market is the place where the supply of money meets the demand for it. The investors which have positive savings capacity use the market to find lucrative and attractive targets for investments. The demand usually comes from companies and governments and the supply from households and companies. The market makes sure that parties in need of money get it and parties who have it get profit. The investors lend the money aiming to gain profit. All parties in need of money do not get it or get as much as needed. The risk profile is a major factor determining who gets funding. The point of the financial market is to increase productivity by moving the money where it is needed. (Mishikn F. 3; The Function of Financial Markets in the Economy 2011)

Banks functions as intermediaries to ease the trading between the two parties. Banks are also able to transform the short-term resources into long term resources so that corporations and governments get the money with adequate maturity. Therefore banks are an essential part of the market. Market for loans with a maturity less than a year is called the money market and loans with a maturity of more than a year are dealt in capital market. The banks are responsible for ensuring that the money lent to institutions and governments is not more than the money given to it in deposits. This is why the central banks require commercial banks to keep certain percentage of the deposits locked away and not available for lending. (Mishikin 1997, 4; The Function of Financial Markets in the Economy 2011)

The main investors in the market are institutional investors which are usually insurance companies, fund managers, retirement funds and governmental units. These deposits cannot be withdrawn the same way that deposits from normal investors such as households. Institutional investors do not distribute loans like banks but buy securities from for example corporations. Security is a claim on the issuer's future income or assets. Institutional investors buy these securities from the primary market meaning purchasing straight from the issuer. The goal of the issuers is to raise funding by exchanging securities with cash. Bonds are debt securities that promise to make payments periodically for a certain period of time. (Mishikin 1997, 4; The Function of Financial Markets in the Economy 2011)

2.1 Central Banks

A Central Bank is a financial institution in charge of the monetary policy of a country. Its mission is to maintain the value of the currency, maintain the stability of the economy, control the money supply and through that control inflation. It also issues the national currency and lends money to other commercial banks. It can also affect employment and interest rates through monetary policies. (Central Banks 2011; EKP: tehtävät 2011)

The American central bank is the Federal Reserve System, also known as FED. The FED differs from other major central banks by being owned by number of large banks in the United States and not by the government. The main governing body of the FED is appointed by the President of the United States and 5 of the 7 representatives make up the FOMC which is in charge of monetary policy. There are also 12 regional Reserve Banks that assist the FED. The most important functions of the FED are taking care of monetary policy, supervision and regulation of private banks and preventing and resolving banking problems. (Inflation figures 2009; Intended Federal Funds Rate 2011)

The Bank of England is the central bank of Great Britain. The most important functions of the BoE are to keep prices stable and supporting the government's policy to gain economic growth. The BoE is in charge of monetary stability meaning there is confidence in the currency and keep the inflation at 2 percent, which is the government's current aim. The BoE uses the interest rate to manage its functions. (Core purposes 2011; Inflation figures 2009)

The European Central Bank is the central bank for the Eurozone countries. These are the countries which have adopted the euro as their official currency. The most important function of the ECB is to manage the European monetary policy and the interest rate is one of the tools. The main objective is to keep the prices stable and the inflation at a maximum of 2 %. The ECB is the one main lender to European banks. (EKP: tehtävät 2011; Inflation figures 2009)

2.2 Disturbances in financial market

The financial market can be disturbed by various causes. Extensive withdrawals, lack of trust, currency crisis and real economy problems can cause significant problems. Causes of financial crisis can be categorized in four different causes; increases in interest rates, increases in uncertainty, assest market effects on balance sheets and bank panics. The 2007 crisis was caused by long lasting economic growth that resulted in over-indebtedness, general rise in prices, over-optimistic views on the economy and unrealistic risk awareness. These factors cause an unsustainable situation that needs to reset back to normal when it reaches a certain limit. (Mishkin 1997, 215)

3 Reasons of the crisis

The financial crisis started out as a sub-prime crisis in the United States in 2007. There were many factors creating the right circumstances for a sub-prime crisis to emerge. The roots of the crisis are in Asia from where significant amounts of cash were invested in US. This kept the interest rate in the US low for too long and was the first thing to allow low income households take loans they couldn’t afford with insufficient collateral. (Timeline: Credit Crunch to downturn 2009; Wolf 2008)

Secondly, the lack of supervision, loopholes in legislation and incentive programs of financial institutions encouraged banks to take risky customers. Once the mortgages were packed together and sold forward the unrealistic ratings of the securities given by credit rating agencies gave a wrong image of the risks of the holdings. The investors also took insurance against the securities from companies that had incorrect information about the packages and hence could not manage with the losses. Altogether these factors led to situation where the risks were severely underestimated and provided a good basis for the crisis to grow and spread. (The Current Financial Crisis: Causes and Policy Issues 2008; Timeline: Credit Crunch to downturn 2009)

3.1 Monetary policies in the United States

The prolonged low interest rate was one of the reasons the crisis emerged. The Federal Reserve kept the interest low for almost four years before raising it from 1 % significantly to over 5 %. The interest was first kept low in order to stimulate the economy after the 9/11 terrorist attack and the bursting of the IT-bubble. The previously lower interest rate had been manageable to many mortgage debtors but the rise in the interest made it difficult for low income and poor credit history households to pay the monthly repayments. The government of the United States had also urged banks to make housing loans available to low income households. This is not seen as a problem even though some banks faced credit losses even with the extremely low interest rate. Because the rate had been so low for so long the housing market overheated and a bubble emerged. Taxing benefits of mortgages legislated in 2007 expanded the emerging bubble. Also the price of stocks was rising due to all the money available at the markets. (A Timeline of Events and Policy Actions 2011; The Current Financial Crisis: Causes and Policy Issues 2008; Timeline: Credit Crunch to downturn 2009)

3.2 Imbalances in current accounts

The roots of the financial crisis go all the way back to Asian economic crisis in the beginning of the 1990s. Asian countries suffering from the crisis in 1990s started saving money to build up a buffer to help coping with future crises. Also the considerable increase in productivity and economical growth took China to be one of the major market economies and new investment targets were needed. (Liikanen 2009; Wolf 2008)

The large surplus in China’s current account was invested abroad and mainly to the United States. This is one of the reasons why the interest rate in the US was kept low; there was so much liquidity in the market the interest rate stays low even though the deficit in US’ current account grows. The irony in the crisis of the financial crisis is that China contributed to the low interest rate because it considered the US financial system safe and stable. (Liikanen 2009; Wolf 2008)

3.3 Structural problems in the financial system

One of the reasons the crisis was able to emerge was the structural problems within the financial system. The regulation and supervision of the market failed and the internal supervision within the institutions functioning in the market failed too. Banks thought their own controlling and risk management was enough and functioning properly when the reality was quite different. The idea of corporate governance led the bankers to believe that their operating is sustainable. It is believed that tough competition influenced the risk management of the companies and led to unhealthy situation in the banks' balance sheets. There are also many parties functioning in the financial system without any kind of supervision. This unsupervised system is called the shadow banking system. For example hedge funds had 5 000 billions invested at best to these unsupervised parties. (Liikanen 2009; Puttonen 2010, 12.)

This structural problem can also be seen in the creation of legislation and supervision. The government representatives changed frequently, so keeping the certain guideline in the financial strategy planning and creating legislation faced problems when the key persons changed. It is said that if the United States had been already using the Basel II recommendations, the financial crisis may have not been so severe. When the crisis emerged the previous Basel I version of the recommendations was in active use in the US. (Liikanen 2009; Puttonen 2010, 8)

3.4 Sub-prime mortgages

When the low interest rate in the United Stated rose the low income households were unable to manage their mortgages due to the increased interests. This was the main cause of the crisis that made the unsustainable situation to start to unravel. Growing credit losses in many financial institutions started the sub-prime crisis. (Suprime in depth 2011; Timeline: Credit Crunch to downturn 2009)

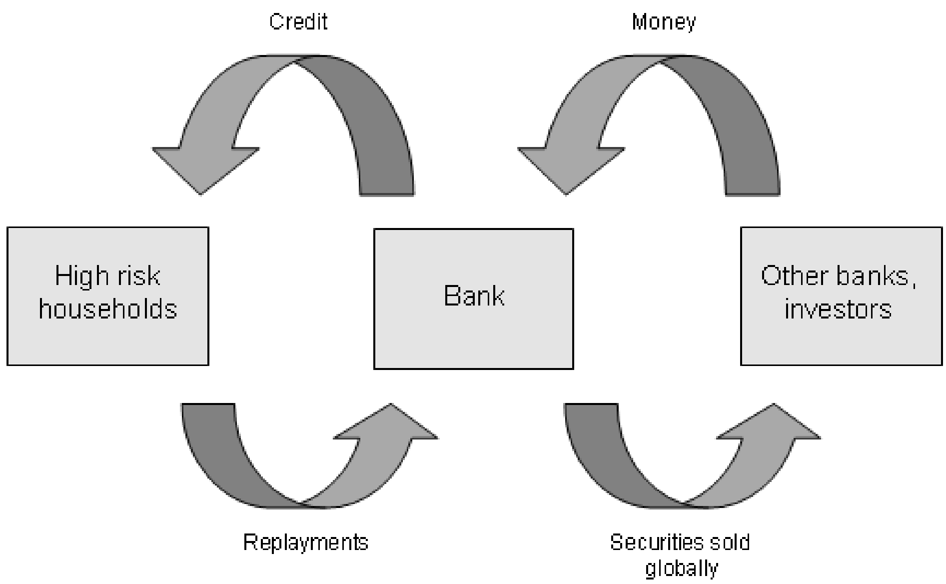

Figure 1: The banks act as intermediaries

A sub-prime mortgage is a loan given to riskier customers. These loans could not be categorized as normal prime-loans because the loans were much more risky than the normal loans. The customer might not have had the sufficient income, no capital for collateral, no initial capital for the loan or poor credit history. The banks wanted to give out these loans because they had a lot of money available but not enough normal prime-customers. (Hirvelä 2010; Subprime mortgages 2011)

The sub-prime loans were also made to look very attractive to lenders. In some cases the first year were given with a discount or interest payments were not required for the first year but put on top of the original mortgage to accumulate more interest. It is obvious that many mortgage takers hadn't got a realistic view of managing the debt or their solvency. (Bankrate 2011; Hirvelä 2010)

3.4.1 Securitization

The problem became more severe because the sub-prime mortgages had been put together and sold forward to investors. This deleted the toxic assests from the banks' balances and gave an unrealistic picture of the banks' financial situation. It was thought the solvency of these banks was much better than in reality. The packaging of the mortgage loans and selling forward was rationalized as a risk diversification because the risks were shared between a large amout of investors and not pulling down the banks' balances. This is known as securitisation. (Taloussanakirja: securitization 2011; Timeline: Credit Crunch to downturn 2009)

The securitisation went too far. It allowed the banks to take too many high risk customers because the actual risk was not with the bank but with the investors. The banks issued loans they were not able to fund with deposits but had to rely on getting cash from the interbank market. This created the basis for the liquidity problems. The securitisation also anabled altering the credit rating of the securities by using a system of such complexity for creating the mortgage related securities sold forward that the credit rating agencies found it hard to rate the package. This made it possible for the banks to leave some of the securities in their balances because the solvency requirement wasn't as high as it would have been if they had given the securities a realistic rating. (Liikanen 2009; Timeline: Credit Crunch to downturn 2009)

The biggest losses came from so called super senior tranches. These securities had a moderate risk but they were financed with lended money because it was thought the risk was so little no protection over possible losses was needed. Therefore the leverage was big and when the crisis emerged the losses were notable. (Liikanen 2009; Timeline: Credit Crunch to downturn 2009)

3.4.2 Housing bubble

When the money that was available to the market the prices of the real estate were getting higher than it had been for a long time. This made the real estate look like profitable investment targets. However, the development of the prices was not based on healthy beliefs. The prices of the real estate did not grow because of the increased income of households but because of a false belief that the market would go up indefinitely. (Liikanen 2009; When Bubbles Burst 2003)

Also the prices of real estate used as collateral for the loans dropped when the housing bubble burst. When the crisis emerged the housings prices decreased due to declining demand after banks tightened lending out. This worsened the crisis even more because this scenario was not taken under consideration when assessing the risks of the securities. (Liikanen 2009; When Bubbles Burst 2003)

3.4.3 Insufficient marketing

The marketing of the mortgage related securities was misleading. In many cases it was said that the securities were risk-free and especially with the index loans the marketing was truly questionable. For example an investment service company Finlandia Group sold index loans guaranteed by Lehman Brothers advertising the loans as a risk-free choice. (Liikanen 2009; Suomessa räjähti iso Lehman –pommi 2009)

3.5 Incentive programs in financial institutions

The incentive programs in financial institutions were mainly targeting short-term goals. This means that the risks materializing in that period are only the short-term risks. The long-term risks are not included in the incentive programs. This encourages management to take unnecessary risks long-term wise. This policy in bonus systems led to the situation that the previous management or during the previous bonus period the management had taken too big risks which actualized during the next period. This can be also referred with moral hazard. (Bhagat 2008; Liikanen 2009; Moral Hazard 2011)

3.6 Credit rating agencies

The credit rating agencies like Standard and Poor's failed to rate funds and mortgage related securities with the right value. This contributed to the crisis when the securities were given a rate far too good. The ratings gave the securities a stamp of good quality they actually didn't possess and made them look far more attractive than the risk actually was. (Bhagat 2008; Liikanen 2009)

The failing was due to the complicity in the structure of the toxic securities and therefore the rating did not correspond with the actual risk. The rating agencies also trusted the banks' own mathematical risk assessment formulas which were not giving correct results. The assessment of the banks' customers was also a lot more challenging to the rating agencies than it was to the banks who knew the lenders a lot better. The investors buying these securities had no clue of the real risks of their holdings. The investors were taking too big a risk with the derivatives. When the banks started to announce their credit losses and give out warnings the lack of information caused panic. (Bhagat 2008; Liikanen 2009; Timeline: Credit Crunch to downturn 2009)

3.7 Credit insurances

One group of financial institutions suffering from the sub-prime crisis was also the insurance companies proving products giving guarantee against credit losses. These credit default swaps that insurance companies offered to investors to make sure the invested capital would be returned even if the seller bank filed for bankruptcy faced the same liquidity problems that the banks did. When the liquidity in the market decreased the insurance companies found it hard to secure the losses of the failing banks. In a way the problem was delegated to the insurance companies which were unable to manage the insurance losses. (Credit Default Swaps – The Next Crisis? 2008; Liikanen 2009)

Another problem was that these insurance companies did not operate in a concentrated market like the stock market but the trading happened as bilateral trade. Therefore the supervision was lacking and the amounts of the losses were difficult to sum up on both sides. It had been challenging to get a realistic view of the development of the risks or come up with sufficient pricing. (Credit Default Swaps – The Next Crisis? 2008; Liikanen 2009;)

4 Effects on the financial market

The financial market changed a lot during the turmoil of the crisis. Inability to identify the toxic assets in banks' balances created such a cloud of mistrust that interbank market nearly dried up completely and caused major havoc. The bank's own assets are a buffer against bad times. Many banks had buffers allowing for only a few months making them very vulnerable.

When the crisis continued the banks were in too much debt just like their customers. In Europe the banking crisis was worse because the debts were 3,5 times bigger than in American banks. By the summer 2009 banks had lost 5 000 billions in market value. (Puttonen 2010, 12-13)

4.1.1 First signs of the crisis

The first real signs of the crisis were to be seen in February 2007 when in America The Federal Home Loan Mortgage Corporation, Freddie Mac, made a press release. The company announced that it will no longer buy the most risky subprime mortgages and related securities. This combined with the bad news that the French bank BNP Paribas in August 2007 started a rise in cost of credit. The trust in interbank market was declining and the banks were getting afraid of lending money to each other. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

4.2 Effects in the United States

The American mortgage lender New Century Financial filed for bankruptcy protection in April 2007. The bank specialized in sub-prime mortgages and was forced to lay off half of its staff. It made the credit rating agencies drop those securities ratings. Because the bank's debts were sold to many other banks it caused the effect to spread around. The value and ratings of the funds investing in mortgage related securities dropped. Other banks were starting to announce losses for the same reasons. This caused a lot of mistrust in the market. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

Soon after the Bear Stearns investment bank announced, that customers would have some difficulty in making withdrawals from two of its hedge funds. These funds had invested in mortgage market and the bank was desperately trying to liquidate the funds. The Federal Reserve was now alert and was announcing that the emerged crisis may be very costly to banks holding the toxic assets. Households began withdrawing the money from those banks in possible trouble. The stock market indices took a downturn too. (Timeline: Credit Crunch to downturn 2009; A Timeline of Events and Policy Actions 2011)

In September the interbank interest rates rose to its highest in 10 years which made the banks extremely nervous whether rival banks will manage or were in urgent need of money themselves. The banks didn't trust each other because it was not known which of their competitors had toxic assets in their balances. Therefore the interbank market was starting to face problems and the availability of liquidity was decreasing. The Fed had to cut down the main interest rate and ease the requirements of lending from it to keep the money flowing. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

By November the liquidity problems became a real issue despite the US government supporting the purchase of troubled Bear Stearns investment bank by rival bank JP Morgan Chase. It had become obvious that the interbank market was not functioning properly. The FED announces it will start auctioning more money against collateral. These auctions are known as TA auctions and there were plans for one every two weeks as long as it was needed. The rating agencies such as Standard and Poor's began to downgrade the ratings of monocline insurers, which specialised in insuring bonds meaning they guaranteed to repay the loan if the insured went bust. There were concerns that the insurers would not be able to pay the losses and cause yet another major loss to the already vulnerable banks. A major bond insurer MBIA announced significant losses blaming the mortgage crisis. In February the US Federal Reserve boss Ben Bernanke admitted there was concern about the monoline insurers' situation. (Timeline: Credit Crunch to downturn 2009; A Timeline of Events and Policy Actions 2011)

In the first quarter of 2008 many banks with better situations purchase other more troubled banks for example the JP Morgan Chase purchase of Bear Stearns bank in March. This causes major changes in the structure of the financial business in the United States. The FED continued to ease the soaring liquidity problem by expanding the list of collateral, arranging more auctions and cutting down the interest rate. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

In the beginning of autumn in 2008 the Semi-federal financial institutions The Federal Home Loan Mortgage Corporation, also known as Freddie Mac and The Federal National Mortgage Association, also known as Fannie Mae had warranted and purchased half of the mortgages. This was to increase the mortgage business and to lower interest rates. The trading was profitable because of the semi-federal nature of the companies. Interest expenses were low because it was thought that the companies would be backed by the government in any scenario and therefore investing in the companies was safe. However the Treasury announced that there were some problems with the two. The naked short selling of the stocks of these two in other banks was temporarily prohibited to help the situation. The government was also authorized to provide financial aid and supervision to the companies. The intervention of the government was to calm down the jumpy investors. (A Timeline of Events and Policy Actions 2011)

The real shock was when the big investment bank Lehman Brothers filed for bankruptcy in September. It was thought it was too big for the government to let fall and the situation caught investors by surprise after it was thought the government will intervene as it did with

Freddie Mac and Fannie Mae. The bank was 4th biggest in the country while the 5th biggest Bear Stearns was financially aided in March of the same year. This created the snowball effect of mistrust in the parties operating in the financial market. Other major banks needed help too and insurance company AIG had to be rescued with emergency financing. Washington Mutual Bank closed its doors because of the credit losses and major cash withdrawals. 16,7 billion dollars was withdrawn in a week. The market shares of the surviving banks rose significantly when the troubled banks were desperately looking for buyers. (A Timeline of Events and Policy Actions 2011; Puttonen 2010, 52)

4.3 Effects in Europe

In September 2007 it was believed that the sub-prime crisis in the United States would not reach Europe even though the toxic securities had been sold in global markets. When the French bank BNP Paribas announced it will stop redemptions in three investment funds it was obvious that the crisis would affect the European banks too. The bank had to stop the transactions since the uncertainty of who had the toxic assets was starting to affect European banks' interbank market. It was unknown at the time how severe the effect would be but the overall atmosphere was relatively peaceful until the Bank of England was authorized to help the Northern Rock investment bank by providing funding. The bank was United Kingdom's fifth largest. (Puttonen 2010, 70; Timeline: Credit Crunch to downturn 2009)

The Northern Rock had been relying on the market and not on the customers' deposits and therefore was suffering from the liquidity problem in Europe more severely than others. The withdrawals made by worried investors further increased pressure on the bank. There were billions of euros withdrawn the day after the bank announced it was receiving emergency support. The withdrawals continued until the government promised to guarantee the savings. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

In October the heavy losses started to emerge. The Swiss bank UBS was the first to announce its losses. The bank lost 3,4 billion dollars because of the sub-prime related investments. The top management of UBS and other banks facing major losses stepped down. The Bank of England was also beginning to auction money to the market to help the liquidity problem despite of the earlier renunciation. There were many other attempts to stimulate the market; the interest rate was lowered and money was provided to the market to help banks manage the lack of liquidity. The intervention of government calmed down the investors for a moment. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

By May 2008 the crisis had reached the real market and was causing problems in the housing industry and Persimmon was the first house builder in UK to announce cutbacks. The problems had led the banks to resort to different forms of short-term solutions to ease the growing liquidity issues. For example the Swiss bank UBS launched 15,5 billion rights issue to its customers in attempt to raise funds to cover some of its assets lost in the sub-prime crisis. The rights issue allowed the customer to buy the shares of the company with a certain price in a certain period of time. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

In July it was obvious the descent into recession was inevitable. The British Chamber of Commerce's survey suggested that the recession was to be expected within months. The affects of the crisis spread in the real economy and the situation was starting to show to normal consumers too. UK Chancellor Alistair Darling announced the crisis could be the worst in 60 years and that Europe should get ready for profound and long-lasting downturn. Governments began noticing the situation of the real market too and for example legislation concerning the purchase of a real estate is loosened. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

When the end of 2008 was getting closer the situation with the banks was getting serious. The next European victim of the crisis was Fortis bank which was partly nationalised to ensure its survival. The bank eventually collapsed despite all the efforts. In Britain the government was intervening by nationalising mortgage lender Bradford & Bingley and the savings operations were sold to the Spanish bank Santander. Belgian, French and Luxembourg governments were also forced to help the troubled bank Dexia and give it financial support to keep it afloat. In Ireland the government said it will guarantee all deposits for the country's main banks for the next two years and in Iceland the country's third-largest bank Glitnir was in trouble after short term funding problems. In November Iceland had to resort to 1,2 billion dollar IMF loan after the banking system collapsed in November. It was the first time a western European nation has needed to resort to IMF loan in over 30 years. Even though many of the banks had not had notable amounts of toxic assets in their balances the interbank market problems were affecting all banks operating in the market. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

4.3.1 Spreading to Europe

The crisis spread to Europe mainly because the toxic mortgage related securities were sold globally and also to European banks. This caused the interbank market in Europe worry about not only the solvency of American banks but also European banks. It was the main reason the liquidity problem hit the European market too. Like in the United States the banks in Europe were lending money to each other only overnight. The selling of property and possessions caused the value of them to fall because all banks in Europe were resorting to it. The bankruptcy of Lehman Brothers did not help the situation, because it had a lot of international activity and operations and therefore affected the operating of European banks too. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

4.4 Effects in Finland

Finland is a small open market economy whose growth is based on international trade. When the mistrust spread after the collapsing of Lehman Brothers it quickly reached nations depending on exporting. Finland was one of those. The financial crisis affected the economy of Finland significantly and very rapidly because as a country it is very sensitive to cycles of economical change. When measuring the decrease of productivity the recession was a lot deeper in Finland compared to other countries. The GNP rate dropped 8 % in 2009 when the crisis was at its worst because the export decreased over a fifth. Importation decreased roughly the same. There were big problems with private investing too, which before the crisis was one of the most important factors in the growth of Finnish economy. Also the overheating in Finnish economy just before the crisis created grounds for a perfect storm that affected the public sector quite strongly. Before the crisis the current account had a notable surplus that quickly changed into a deficit and the public debt has increased fast. The government has been able to soften the fall because of the good situation Finland entered the crisis with. (Feystätter & Mattila 2011; Holm 2009; Puttonen 2010, 84)

Finnish companies operating in exporting suffered a lot during the crisis. When exporting dropped over 40 percent at worst in July 2009 the corporate field was suffering major losses. There were a lot of redundancies due to the contracts made with the unions that limited the flexibility. Many cutbacks were made and closings of factories such as Kemijärvi or Anjalankoski were daily news. Companies were struggling with financing as well. Problems within the banking sector affected the availability of money for Finnish companies and forced them to seek funding from local, Finnish banks instead of international funding. Even though Finnish banks were doing relatively well, the increased risk premiums elevated the price of the money. Fluctuation in the stock market pushed away potential investors too. Productivity fell when retail shops stopped ordering new goods in fear of changes in consumption and started to empty the storages instead. (Holm 2009; Puttonen 2010, 86)

The financial market situation in Finland was better when compared with the rest of the Europe, since the banks had a lot of experience of the 1990s recession and hadn’t engaged in such big risks. The stress test performed on banks proved that Finnish banks could have dealt with a lot more than they had to. The banks also gained a lot of new customers when companies had to resort to domestic financing after Europe's financial institutions started tightening the lending. The stock market suffered a lot more than the banks. Still the 2007-2009 financial crisis had a huge effect on Finland's economic growth. Overall production in 2009 was 8,2 % less than in 2008.(Feystätter & Mattila 2011; Liikanen 2009)

Private consumption suffered relatively little. Tax cutbacks and ECB interest policy had a positive effect on private debt management and consumers had the money to keep spending on other things as well. The interest changes affected the customers of Finnish banks very quickly because most of the loans given by Finnish banks have 3-12 month Euribor as reference rate whereas in central Europe even 5-10 year interest are used. The value of apartments did not decrease notably so the net assets of consumers were not affected. This meant that the companies operating only in Finland did not face the consequences of the crisis as strongly as the companies operating in international market. These companies did not have to resort to layoffs and unemployment rate did not reach the limits feared in the beginning of the crisis. All in all, Finnish consumers' ability to spend was affected less than elsewhere in Europe. (Feystätter & Mattila 2011)

Compared to the 90s recession the situation with which Finland entered the crisis was significantly better. In 1990 the private sector was notably indebted and had debts in foreign currencies. In 2007 this currency risk was pretty much non-existent and companies' balances were stronger. The companies didn't have to deal with the devaluation of the euro like they had to in 1990. In 1990 households were roughly as indebted as in 2007, but the difference in interest rates is huge. In 1990 the interest rate was more or less between 8 % and 9 % and the maturities were a lot shorter. This created a lot of pressure on the households to manage the mortgages. (Liikanen 2009)

4.5 Effects on world economy

The world economy was changed profoundly by the crisis. Governments now own more companies than before, especially banks. This was done to ensure that the economy would function normally. Shareholders of these and other companies have lost hundreds of millions of dollars during the crisis when the stock markets fell. The Organisation for Economic Co-operation and Development announced that the world had suffered the biggest recession since the World War II and the global growth would be 4,1 % negative for 2009. 2008 growth was still positive even though developed countries were suffering from the effects of the crisis because the developing countries were still going strong and evened out the losses. In 2008 China's economy grew 7,9 % annual rate, when UK economy grew only 0,8% which was a lot more than expected. In 2009 world trade collapsed and the crisis worsened when developing countries' current accounts were affected. Industrial production and demand crashed and consumption decreased globally. The crisis also increased the unemployment rates all around the world when economies started to suffer from decreased demand and had to cut back with expenses. Global oil consumption also fell for the first time in fifteen years, which is a strong indicator of a global recession. (Timeline: Credit Crunch to downturn 2009; Puttonen 2010, 20)

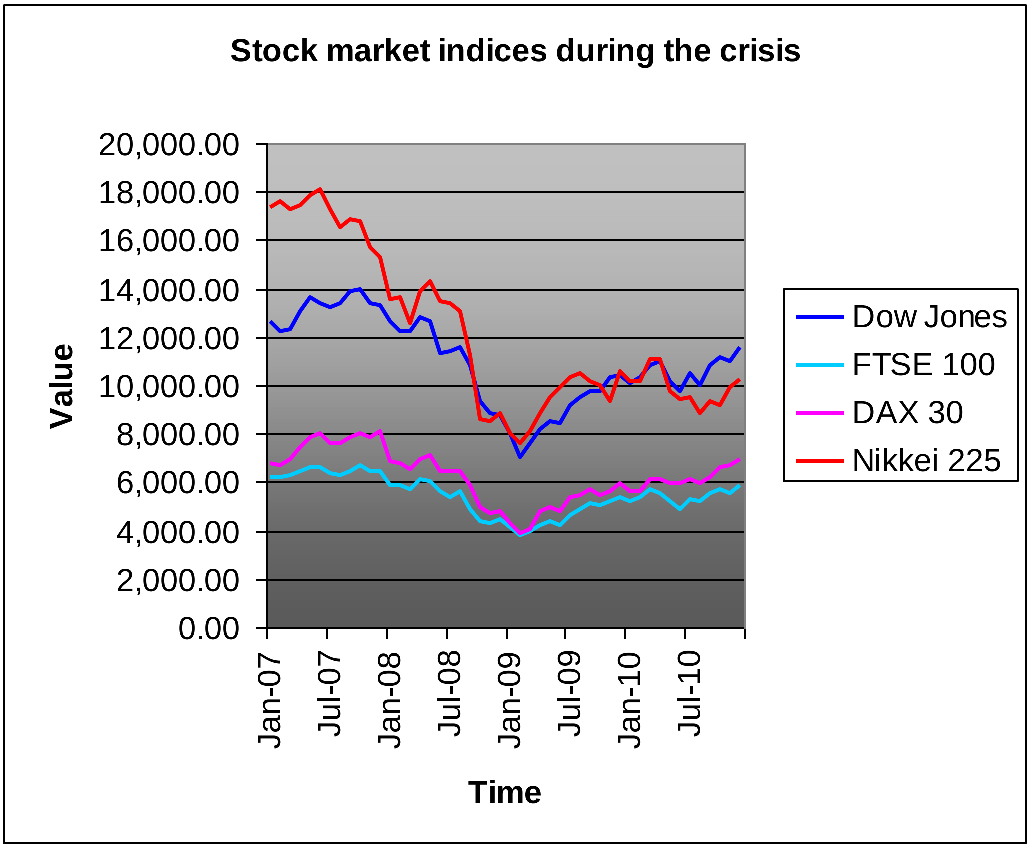

Figure 2: Changes in global stock market indices during the crisis

4.6 Effects on interest rates

The low interest rate of the United States was one of the reasons the crisis was able to emerge. When the United States raised the interest rate the credit losses grew significantly and caused the problem. Therefore when the problem progressed it had to try to scale down the problems and lower the interest rate again. The interest rate was lowered in order to stop new mortgage related losses. It was also used to help the interbank liquidity problem. By keeping the interest rate low the FED tried to provide all banks with affordable cash instead of them filing for bankruptcy when running out of cash. It was an attempt to keep the nation from slumping into a recession. The interest rate is the rate used in overnight lending. The rate is set by the market and not explicitly laid down by the FED. The FED can try to manage the rate by regulating the money supply in the market. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

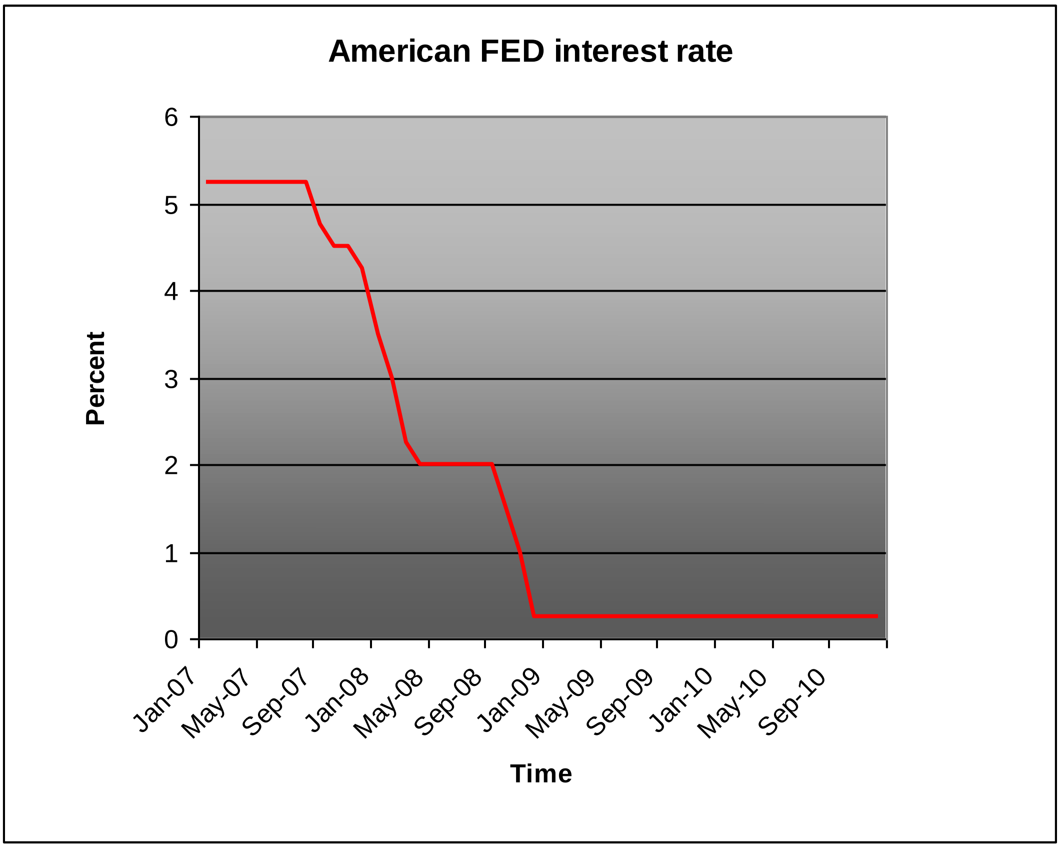

Figure 3: Overnight lending interest rate

In Europe, the European Central Bank did not lower the interest rate immediately because its policy was against that. That is why the European interest rates lowered later than in other places suffering from the financial crisis. In autumn 2008 the ECB took a new direction and focused on providing liquidity to banks and keeping the price down. This also affected the market rates like the Euribor and helped the situation of households and corporations and stimulated the real market. (Key ECB interest rates 2011)

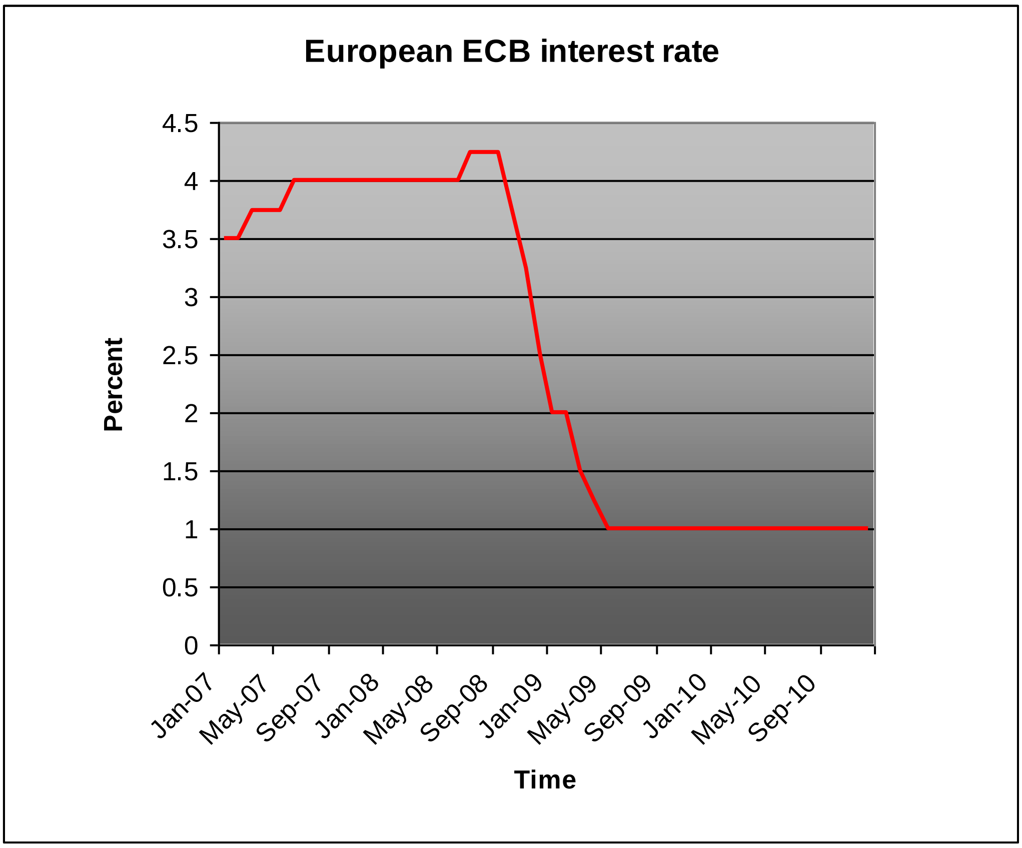

Figure 4: European central bank intervenes through interest rate control

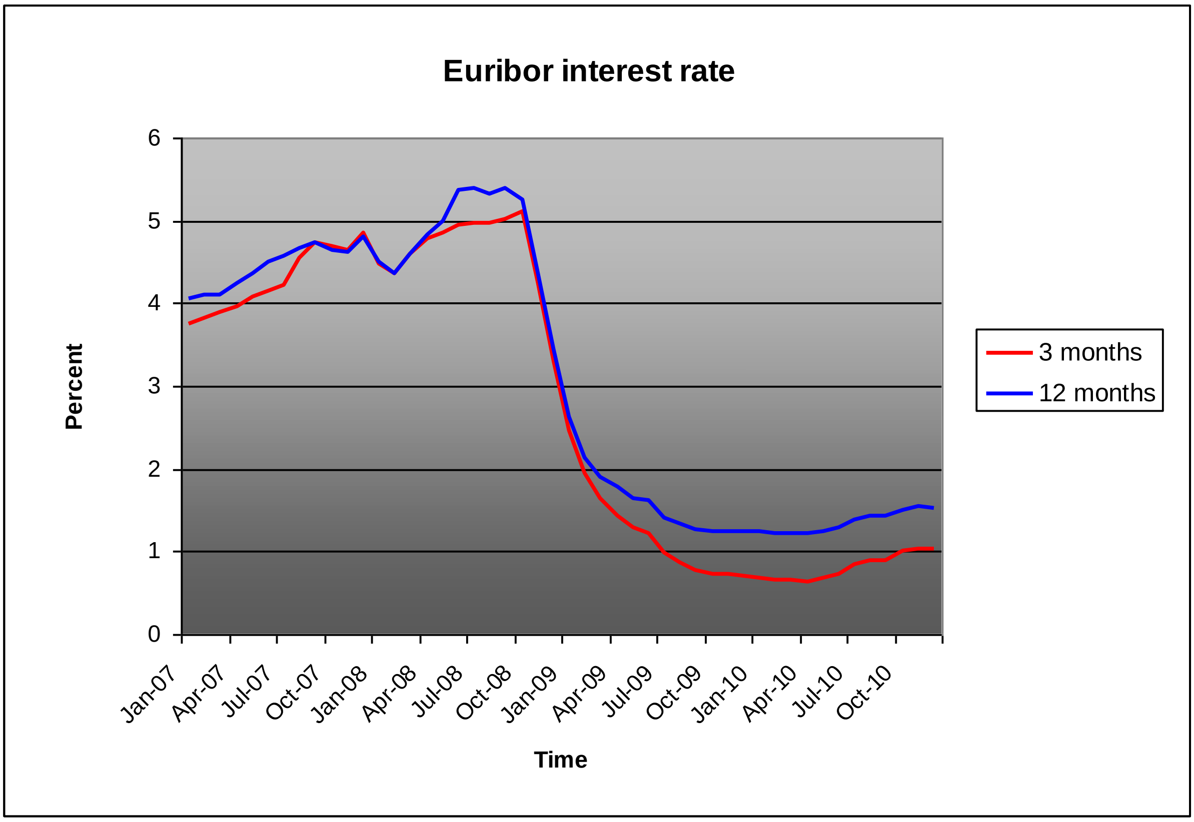

Figure 5: Euribor interest rates follow the ECB's interest rate

5 The spreading to the real economy

The crisis was starting to affect the real economy in the beginning of 2008 when the economic growth of developed countries was slowing down. The World's economic growth was only sustained by developing countries but when the crisis worsened in the beginning of 2009 world trade collapsed. Industrial production and demand crashed and consumption decreased globally. The development of the real economy in Europe was doing relatively well before the summer of 2008. In Europe it was believed that the financial crisis won't significantly spread to real economy in Europe but only in the US. The reality was quite different. (Hämäläinen 2009; Timeline: Credit Crunch to downturn 2009)

5.1 Housing industry

The housing industry was the first industry to suffer from the effects of the crisis. First of all there had been a housing bubble when the interest rate was low and funding available easily. When the crisis emerged and the liquidity problems tightened the banks' requirements, the demand decreased. This caused the real estate prices to fall. Secondly, there was no need for new building since there were already many unsold properties after many foreclosures due to credit losses. Persimmon was the first UK house builder to announce significant cutbacks due to lack of affordable mortgages and fall in consumer confidence. It said its sales had dropped by a quarter in one quartile. The house prices fell by 1% in one year and the next year over 20 percent. (Timeline: Credit Crunch to downturn 2009; Schmidt-Hebbel 2008)

The first signs of the impact on the housing industry were already seen in May 2008 when mortgage loans without deposit disappeared from the list of provided mortgage products along with 20 % of other mortgage products. Governments tried hard to help the struggling housing market by trying to ease the buying of a house. (Timeline: Credit Crunch to downturn 2009)

5.2 Retail market

By October 2008 the crisis was reaching the retail market. Worried consumers tried to cut down on shopping to save money and built up a buffer for the possible changes in household incomes. The soaring unemployment rate and cutbacks in corporations was disrupting consumer confidence and therefore affecting the retail market. The US retail sales figures showed a fall of 1,2 percent. Since the retail business and consumer confidence were very important figures for the American economy the stock market was falling again after the good news provided by government rescue packages. (Timeline: Credit Crunch to downturn 2009)

5.3 Car industry

The car industry is one of the first industries to suffer from recession. As soon as consumer confidence began to diminish the carmakers had to deal with consumer cutbacks. The credit crunch was affecting lending to consumers which affected the solvency of households. The purchase of a car being a big investment for households it was one of the first to suffer from the saving boom. Especially the carmakers in the US were in a lot of trouble and without government assistance surely would have gone bankrupt. 17,4 billion dollars of the bail-out money was directed to the three US carmakers; General Motors, Ford and Chrysler. The car retail shops tried to stimulate business by cooperating with banks offering ready-made car funding packages to potential buyers. (Autokauppa katsoo synkeänä tulevaan 2008; Timeline: Credit Crunch to downturn 2009)

5.4 Corporations' problems

The liquidity problems also affected the operations of corporations even though governments had provided a lot of financial aid even to corporations. When banks did not trust each other and money was tight it was harder also for corporations to get loans and funding. The bigger ones were unable to get it straight from the market and smaller and medium sized faced the new, tightened requirements of banks and might have not gotten as much funding as needed. When the liquidity was low in a corporation it affected the daily activities. Investment decisions were withdrawn, cutbacks are carried out and staff laid off. When several corporations went through with these kinds of decisions at the same time it affected other corporations and decreased the consumer confidence. (Timeline: Credit Crunch to downturn 2009)

6 Taking over the situation

The help needed in the crisis with the financial institutions can be divided into three different categories: providing liquidity, capital arrangements and cleaning the banks' balances of their toxic assets. The governments in developed and developing countries had to intervene. Even China set out a 586 billion dollar stimulus package to avoid the effects of the spreading crisis. The banks were not the only ones getting capital from the governments. Companies and insurers were also suffering from the liquidity problems and lack of own capital. The governments made loans available for small and medium sized business firms by promising to guarantee the loans given by banks. This helped the banks to restart the loaning business without the worry of credit losses and gave the firms affordable funding to stop bankruptcies. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

When the crisis advanced the real economy needed help too. When the real economy started to suffer some of the money originally meant for the banks were spent on stimulating the real economy. In February 2009 a 787 billion dollar stimulus package was released to help the troubled economy. In France the stimulus package was not only for public sector investments but also to carmakers in trouble. In the United States a17,4 billion of the rescue package was directed to the three US carmakers aiming to stop major redundancies in the industry. President Bush also signed an act to help the troubled homeowners keep their homes and manage their mortgages. Some countries like the UK tried to stimulate the real economy by VAT cuts. It temporarily cut the level of VAT from 17,5 % to 15 %. Some like China cut their corporate taxes too. Government assistance was not enough in all countries. The International Monetary Fund provided a 16,4 billion dollar loan to Ukraine to help it to recover the financial crisis. Iceland had to also resort to IMF funding to manage. (A Timeline of Events and Policy Actions 2011; Timeline: Credit Crunch to downturn 2009)

6.1 Providing liquidity

The sub-prime crisis caused the banks to suffer from a lack of liquidity that caused problems in the banks' daily operations. To help the situation return to normal banks needed affordable and available cash. To make this happen, government intervention was needed. The governments addressed the issue mainly through central banks by lowering interest rates, giving out more money, widening the list of collateral and lifting the deposit insurance coverage. (Liikanen 2009)

One critical way to help the liquidity problem was to lower the interest rate. In the United States the interest rate was lowered in December 2008, soon after the problems emerged so the banks would get affordable funding. The risk premiums rose significantly due to the lack of trust in the interbank market. This increased premium made the funding expensive and unavailable to banks when they needed it the most. In the beginning of the crisis the lowered interest rate in the United States helped the liquidity problems but in the autumn of 2009 the risk premiums increased again. Those banks that relied on the interbank market and not on customer deposits were in big problems when the lending expenses rose notably. The cutting down of the interest rate was also done to avoid more credit losses with sub-prime loans. (Timeline: Credit Crunch to downturn 2009)

When the worried customers started to withdraw money from the banks the banks were facing a lot of problems. They were in desperate need of capital to manage the problems. Some of the banks did not have enough of their own capital to buffer the withdrawals and credit losses so capital arrangements were needed. In October 2008 the deposit insurance coverage was increased to 250,000 dollars per depositor to avoid more liquidity problems in banks and investment companies. In the UK the limit per depositor is lifted up to 50.000 pounds. The governments' goal was to keep money in the banks so the banks would not need to rely on the troubled interbank market so much. (A Timeline of Events and Policy Actions 2011; Puttonen 2010, 71; Timeline: Credit Crunch to downturn 2009)

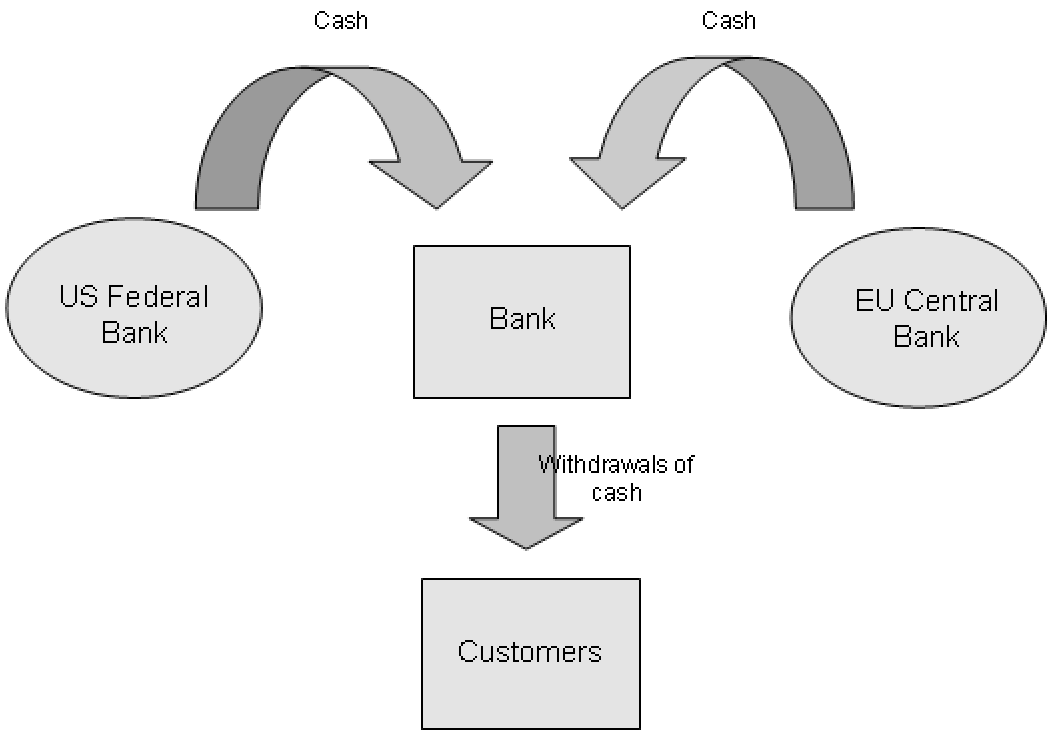

Figure 6: Central Banks provide banks with liquidity to help them manage the withdrawals

The European Central Bank tried to help the soaring liquidity problem by giving out more money than normally. Normally European Central bank is in charge of the money flow to the market. The money is auctioned with floating interest rates and ECB sets the minimum interest rate for the auctioned cash. The amount of the money auctioned depends on the ECB's estimation of the money needed in the market. The banks place their offers which are carried out starting with the best until the auction runs out of cash to deal out. The main idea was that the ECB did not need to take each individual bank's situation under consideration because the banks lending the money straight from ECB lent the money forward to other banks. This was the main idea of the interbank market. When the problems emerged the banks were no longer willing to lend money to each other. In order for to the money to reach the smaller banks the ECB had to give out more money than it thought the market needed. Other central banks were facing similar problems. (Liquidity analysis 2011; Timeline: Credit Crunch to downturn 2009)

When Lehman Brothers fell, the problems within the interbank market got worse. Banks refused to lend the money forward to other banks in fear of losing the money if the rival bank bankrupted and deposited the money back to central banks even though the overnight interest was less than the interest banks had to pay to central banks for lending the money in the first place. This meant that the banks were more willing to lose money than lend it to other banks. This raised the Euribor interest rate. The ECB changed the auctions to a fixed rate and banks could lend as much money as they wanted. The only limitations was collateral. (Liquidity analysis 2011; Timeline: Credit Crunch to downturn 2009)

6.2 Capital arrangements

In 2008 the situation needed governments to guarantee the capital and save troubled banks by investing in them. About half of the world's share tradings are made through funds and the portfolio managers were selling stocks to be able to get cash for the redemptions. The governments had to intervene to stop the disturbance within the market before it would have started to bring down other companies too and not only banks. (Liikanen 2009; Puttonen 2010, 22)

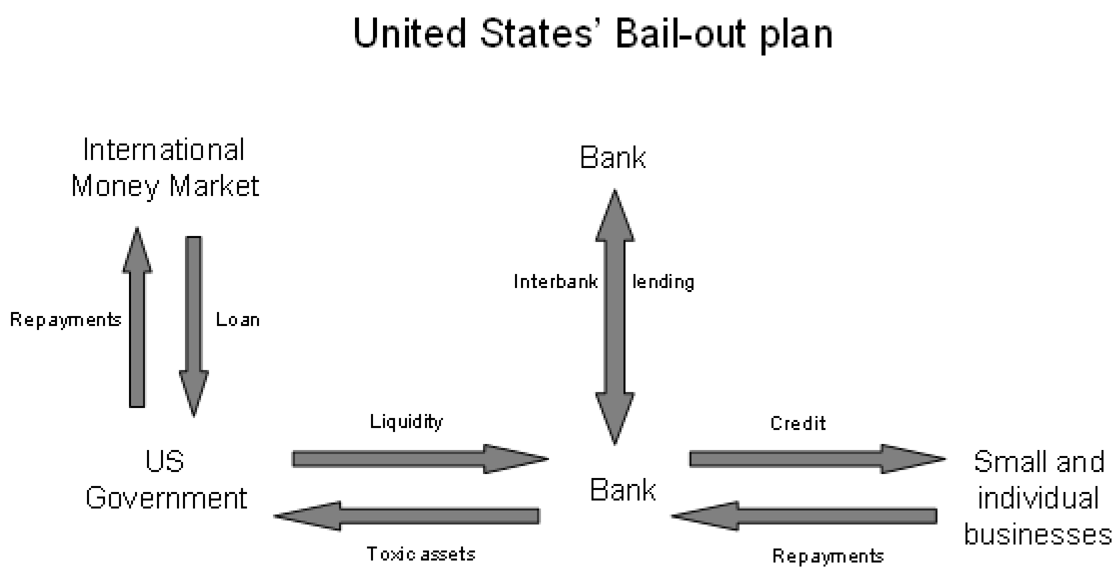

Figure 7: The United States' bail out plan operated by US government

A couple of days after the Lehman Brothers' bankruptcy President Bush signed the paper allowing the Treasury Department to invest money in the money market with mutual funds worth of 50 billion dollars. This was to replace the money withdrawn from the market. The investment plan was earlier rejected but Lehman Brothers' problems were a wake up call to the government to address the issue as soon as possible. This was the first attempt to support the banks by arranging capital. Soon after that the House of Representatives passed the 700 billion plan to rescue the US financial sector. In the UK the rescue package was worth 50 billion pounds most of the funds aimed to save RBS and Lloyds-HBOS. In France the stimulus package is worth 26 billion Euros. Governments also spend a lot of money buying the shares of institutions operating in the financial market in an attempt to restore the confidence in the banking sector and support the companies and stock exchange. (A Timeline of Events and Policy Actions 2011; Economic Stimulus 2011; Timeline: Credit Crunch to downturn 2009)

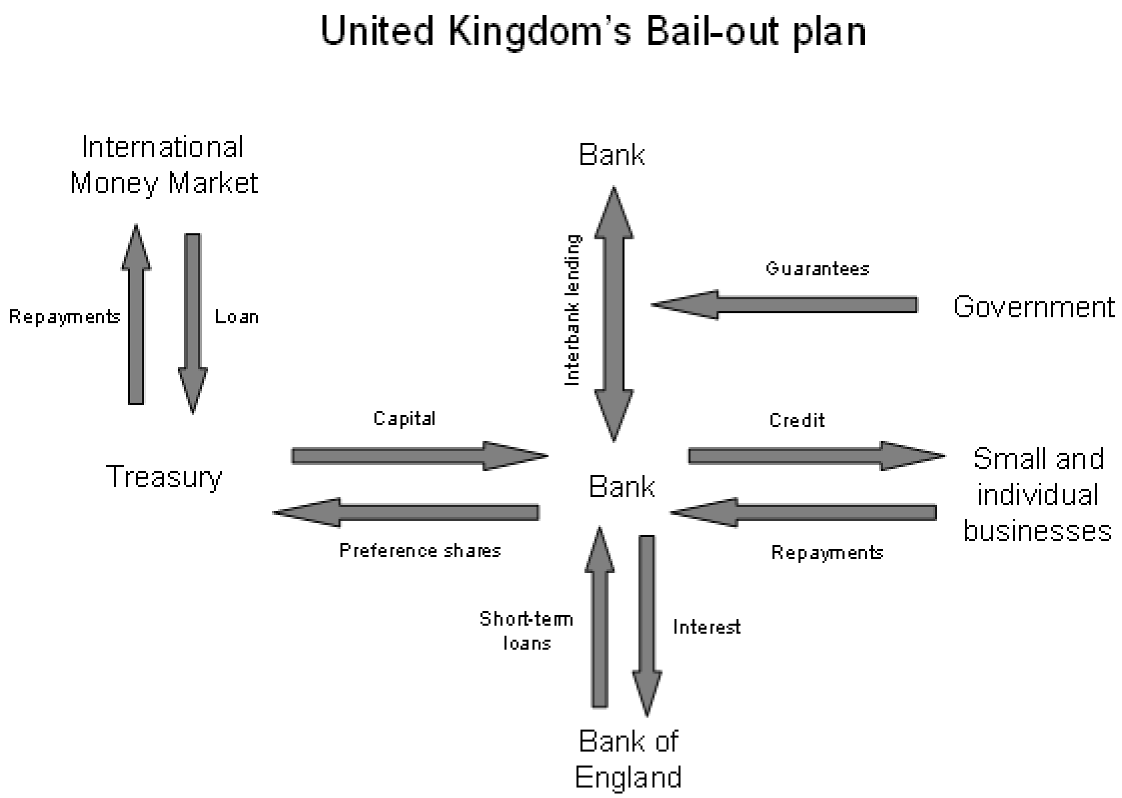

Figure 8: United Kingdom's bail-out plan operated by the Bank of England and the Treasury

Governments were also forced to take over financial institutions to ensure that they make it through the crisis. In Ireland Anglo Irish Bank did not have the money needed to secure its future, in Germany the country's biggest bank Hypo Real Estate relied on government assistance and in Iceland Landsbanki was taken under public control. All banks had also international functions that increased the problem in other banks. In the UK three of the biggest banks were nationalised including Royal Bank of Scotland, Lloyds TBS and HBOS. The buyouts of those three cost the taxpayers 37 billion pounds altogether. (It's raining bailouts in Europe 2008; Timeline: Credit Crunch to downturn 2009)

6.3 Cleaning of the banks' balances

The troubled assets in banks' balancies had to be removed to be able to start the healing of the market. The government of the United States approved a rescue package to the American financial system that would let the treasury buy the toxic assets from the banks. The purchases were authorized up to 700 billion dollars. It was the biggest intervention since the Great Depression in the 1930s. The rescue plan was first rejected leaving the investors extremely worried because there was increasing concern of how the banks could start to operate normally if the toxic assets were still present in the balances'. This rejection caused the Dow Jones industrial index, which indicated the development of 30 major companies operating in the industrial market, slump 7 % in one day which was an all time record. In Europe the Bank of England was also authorized to help the troubled banks with 50 billion pounds by swapping the risky mortgage debts to safer government bonds. This intervention was to help the jumpy investors also keep the money in the banks to relieve the liquidity problems. (Timeline: Credit Crunch to downturn 2009)

The process of cleaning the troubled banks' balances is still in progress. Banks are put through different kind of stress tests to make sure the balances' are healthy enough and that the toxic assets are no longer an issue. These tests have not been carried out in all areas suffering from the crisis so the amount of toxic assets in the global financial system is still unknown. The good thing is that the investors are a lot more cautious than they were before the crisis so it is in the banks' own interest to take part in the tests to maintain their attractiveness. (EU bank stress tests result due 2011; Liikanen 2009)

7 Current situation

Rich western countries have suffered more from the effects of the crisis than developing countries like China because the developed countries have been living beyond their means. This has moved the financial centre to Asia. The Asian banks have not been able to escape the problem entirely despite the area's economic growth because of the crisis' global nature. Asian banks hold notable amounts of US and European bonds and therefore are dependent on there areas' economic situation too. The survival of developed countries is important to Asia too. The plus side for Asian countries is that they have an increased ascendancy in the International Monetary Fund. If the troubled European countries have to resort to IMF funding Asia will have a say on the arrangements. (Timeline: Credit Crunch to downturn 2009)

The United States is on the verge of bankruptcy. The budget deficit has increased significantly during the crisis and the country will face cut backs in the public sector soon. The FED has created money to help stimulate the troubled economy but inflation has increased significantly and will do so again in the near future. The extra money has also started to create new bubbles. The stock market indices have risen to unsustainable levels and real estate business is also booming. If the development is not healthy this will cause new problems later on. The country is about to lose its prized triple A rating because during the financial crisis the debt has grown nearly unmanageable. Losing its good rating the U.S. will have to come up with very imaginative ways to survive the increased risk premiums and get a sufficient amount of funding. (Analysis: Ratings agencies rattle cages in U.S. 2011)

In Europe countries like Ireland and Greece have been relying on help from other European countries to manage the effects of the financial crisis. Other countries have been forced to make major cut backs in the public sector in order to avoid for example increasing school fees in the United Kingdom and raising the retirement age in France. More and more members of the EU are announcing problems in their budgets. The financial crisis is not the only factor in these countries' emerging troubles, but has been the last straw to start the snowball effect. The countries with a sustainable economy, such as Germany, the Netherlands and Finland, are financing the deficits of the troubled Euro zone countries to maintain the credibility of the Euro and help the economy of the Euro zone get though the crisis. So far the countries in need of financial support have been granted loans by the other Euro zone countries. This has been inevitable to maintain even the currency itself. There has been a growing concern about more countries asking for EU support. It has created increasing financial and political pressure on all member countries and the decision over creating a European Monetary Fund is still indefinite. This would give the EU control over public finances within the Euro zone. The EU has been very reluctant to let troubled countries resort to IMF funding because this would give non-EU countries possibility to take part in EU decision-making. (Rebuilding Greece's finances 2010)

The Euro zone situation is also a good opportunity for investors to make risk-free profits. Since other EU countries have better credit ratings, like Germany, than others, like Ireland, and therefore are having lower risk premiums the interest for those bonds is lower than for countries' that are in trouble. By selling Germany bonds and buying Ireland bonds, which are guaranteed by Germany, investors can make more profit for the same risk. This means that the risk premiums should be the same in all Euro zone countries but so far this is not the reality. (Rebuilding Greece's finances 2010; Puttonen 2010, 48)

In Finland the situation is good. The banks managed to get through the crisis on their own and no government intervention was needed. The banks have also passed European stress tests with good scores and there is no concern about the sustainability of the business of Finnish banks. Finnish banks are making profit much as before the crisis. The supervision of the financial market has been better than in many other countries affected by the crisis. Since the bureaus of financial supervision and insurance supervision are these days combined control over the system has been more extensive and broader. With the global economy recovering from the crisis the Finnish economy is also growing when international trade is growing. (Liikanen 2009)

8 Prevention and future scenarios

The crisis has changed the market and the extensiveness of the effects has gained global attention. The global economic growth has long been driven by debt. It is obvious that growth based on imbalance of current accounts cannot create healty, sustainable grounds for future growth. There needs to be new regulations and demands in order to prevent future problems. The US government has annouced it will make a major reform of the banking system. It has been described as the biggest change in the financial system since the 1930s.

8.1 Changes in financial institutions

Moral hazard was one of the major reasons why the situation exploded and the unsustainability was created. It was the greed leading the managers in charge that caused the banks to take unnecessary risks and even commit fraud which resulted in increased credit losses when the crisis emerged. The financial sector is also in close paid close attention by political parties who might be affected by political pressure and therefore creates moral hazard aswell. The challenge is now to minimize the possibility of moral hazard to prevent future crises. In order to minimize the possibility there needs to be low incentives, regulations and supervision. (Mishkin 1997, 280)

Banks are now facing a lot of pressure to keep the bonuses and other incentives low. Consumers and taxpayers are expecting the bankers to keep the bail-out plans fresh in mind and not take the same kind of risks. Through the government assistance the taxpayers saved the banks and now the taxpayers expect the senior management to take responsibility for their actions and in some cases been appalled by bank plans to give out bonuses as they did before. Therefore there needs to be restrictions with the bonus systems. One option is to pay a part of the bonuses as company shares which should motivate the management to keep the business profitable but more importantly, sustainable. If the banks do not pay back the money lent by the governments they will face huge restrictions. This is to make sure it is in everyones best interest to promote the change and not let the banks get off too easily. (Puttonen 2010, 88)

Banks should face minimum limitations to how much they should keep securities in their own balances. This would be an incentive to keep the quality of these securities high and prevent creating toxic ones. The requirements for solvency must be lifted, though it is important to keep them flexible to prevent another credit crunch. The requirements should follow the cyclical movements to help the banks adjust to different market situations. Also the rating of these securities needs to be taken under consideration. The market needs global standards. The classification methods need to be screened carefully to make sure that the standards are set high enough. The stock market is not the same as it was before. Investors have transferred money to bank accounts to minimize the risks. This has lifted the deposit insurance rates. The problem is that the rate differs in different countries which have made some areas look more attractive than others. This means the money does not spread equally to all areas and investments to same company can be riskier in other places than in others. (Lessons of the Financial Crisis for Future Regulation of Financial Institutions and Markets and for Liquidity Management 2009; Liikanen 2009; Puttonen 2010, 22)

It is also important to supervise the whole system financial institutions create and not only single banks. Banks operate in global market and this global dimension must be taken under consideration while creating new improved regulations for banks. These regulations must be internationally standardized to efficiently prevent future crises. In the absence of these internationally recognized rules banks are able to go around the unpleasant regulations by relocating the operations to other, less supervised countries such as the Cayman Islands. The problem is there is no international central bank to supervise all parties in the market. Next best thing already existing is the IMF which does not have the support of all countries and institutions operating in the international financial market. The connections between banks have been previously overlooked even though those connections have played a vital part in the crisis. This helps the authorities understand what the collapse of one institution means to the whole system and help them prevent major effects. (Lessons of the Financial Crisis for Future Regulation of Financial Institutions and Markets and for Liquidity Management 2009; Liikanen 2009; Mishkin 1997, 308)

Accounting needs to be changed too. The valuation of assets needs to come closer to a fair value. Experienced accountants are able to affect the banks’ balances in a way that it is favorable to the bank. These loopholes in legislation must be tightened. The fair value accounting means that financial institutions should put down only realized losses and not some default value that is changes over the years’ losses. These kinds of inconsistencies in legislation in and between countries must be deleted to create transparent and homogeneous international financial legislation. This helps the rating agencies to produce accurate and reliable information. (Analysis: Ratings agencies rattle cages in U.S. 2011; Liikanen 2009)

8.2 Changes in ownership

After the crisis the ownership structure of financial institutions and companies has changed. Private financial institutions were nationalized and the government's role as an owner has increased. This has changed the balance between public and private sector and subsequently created more supervision. The downside is national debts have ballooned. Companies have also gained new owners from abroad. Investors especially from the Middle-East have increased their ownership in western corporations and financial institutions. The downside from a western point of view is that it gives the Middle-East increased opportunities to affect the changes and decisions where they have invested. Europe has also been affected by increased IMF control. Countries like Iceland and Ukraine have had funding from the IMF which lets the IMF control and take part in the decision making process in these countries. This may not be a good thing in all cases. These countries have had to give up some of their control and self-determination. Any European country has not resorted to IMF help in over 30 years. (Liikanen 2009; Puttonen 2010, 22)

9 Conclusion

The problems started when investment banks such as Goldman Sachs continued to come up with riskier products to increase profits when solvency of these banks was not on a high enough level to support that. The low interest rate from the beginning of 2000 and uncontrollable mortgage lending created an unsustainable situation. Securitization made by banks increased the risk with mortgage related securities complicating the risk assessment of these papers. When real estate prices began to fall and the interest rate got higher the sub-prime mortgage owners began to struggle with their repayments. Credit losses soared. When the greed turned into fear investors began to question whether financial institutions were aware of the true extent of the losses in their balances. Stock markets declined and liquidity problems emerged. Banks and other financial institutions found it hard to find cash to survive the withdrawals. (Perry 2011)

Governments were forced to intervene as banks started to announce major credit losses and file for bankruptcy. Bear Stearns collapsed and was bought by JPMorgan in March 2008 and by September mortgage lenders Fannie Mae and Freddie Mac were being nationalized. When governments failed to save Lehman Brothers the fear spread around the globe when investors relying on government support realized the seriousness of the situation. Emergency operations were in progress and central banks lowered interest rates. The United States began to offer guarantees for loans later followed by other nations. The list of valid collateral was widened. In October 2008 the US government approved a 700 billion dollar bail-out plan. When the crisis spread to real economy governments began to stimulate other industries too. (Perry 2011)

The crisis has left many unemployed, countries' balances in deficit and changed the ownership system of the financial institutions. The effects will be long-term and force the system to change. New regulations and restrictions will be made and supervision will be expanded. Governments' role in world guided by markets has increased significantly and the tax-payers in Europe and the United States are facing a multi-billion bill. The intensity of the crisis has reminded the investors and banks that the pursuit of profit has reached unsustainable levels. Restoring the balance will be an extensive and prolonged mission and will require profound changes.

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