# The anatomy of financial crises and the current one's effects on the Swedish economy

**Authors:** Ifete Binaku
Niklas Holmström

**Supervisor:** Christer Peterson

**Student**
**Umeå School of Business**
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## Abstract

**Title** The anatomy of financial crises and the current one´s effects on the Swedish economy

**Authors** Ifete Binaku and Niklas Holmström

**Background** The subprime crisis started in the United States, but was soon transmitted to other countries and even to Sweden. The impact of the financial crisis has had negative consequences for the Swedish real economy, especially in its output. Since Sweden is a big exporting country, its macro economy has been negatively affected by the present global financial crisis.

**Purpose** We are interesting to illustrate how the theories can explain the causes and effects of financial crises. Therefore, the aim of this study is simply to acquire knowledge on how the impacts on the Swedish economy can be described by theories on financial crises.

**Method** The theoretical models guided our choices of the financial and economic indicators. The thesis employed a quantitative research approach where the empirical materials are collected from the yearly data period: 2005 to 2009. The secondary analysis has been applied where yeas 2005 to 2009 were selected in order to get an overview of variables developments before financial crises started and in meantime.

**Results** Our findings showed that the financial crisis has affected the Swedish economy negatively. Furthermore, the repercussion on the Swedish economy can be better explained by certain parts of the theories combined, than by one theory left alone.

**Acknowledgement**

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**Executive summary**

The current crisis began in the United States when the subprime mortgages defaulted. Financial institutions, which are the key intermediaries in the financial system, faced a systematic risk that froze and decreased the capital in the real economy. This is not the only time the world has experienced a financial crisis. However, the present crisis is more widespread than pervious ones. The subprime crisis started in the United States, but was soon transmitted to other countries and even to Sweden. The impact of the financial crisis has had negative consequences for the Swedish real economy, especially in its output. Since Sweden is a big exporting country, its macro economy has been negatively affected by the present global financial crisis.

The study illustrates how the theories on financial crises can explain the causes and effects of the current financial crisis. With the help of theories on financial crises, this study therefore describes the impact of financial crises on Swedish economy.

The theoretical models guided our choices of the financial and economic indicators. Our review of the literature has revealed a number of relevant variables that were essential for us to investigate, in order to describe and explain the financial crisis from a Swedish perspective. Economic indicators such as stock market index, consumer price index, interest rates, unemployment and gross domestic products were chosen, in order to describe and explain the impacts on the Swedish economy. The thesis employed a quantitative research approach where the empirical materials are collected from the yearly data period: 2005 to 2009.

Our findings showed that the financial crisis has affected the Swedish economy negatively. Furthermore, our empirical material has confirmed that the stock market, gross domestic products, unemployment and savings ratio have been affected by the financial crisis. The repercussion on the Swedish economy can be better explained by certain parts of the theories combined, than by one theory left alone. The reason for this could be explained by the fact that the theories were developed as a reaction on an earlier crisis, which took place during a period with different economic conditions.

## Table of content

# INTRODUCTION

*In this chapter, we will present the background, give an overview of the subject and set the point of departure for this thesis.*

## 1.1 Problem discussion

History has demonstrated several financial crises. Most economists look at the Great Depression in the 1930's as irrational and unnecessary. If Herbert Hoover had not tried to balance the budget at the beginning of the economic downfall, and if the Federal Reserve had not been left alone defending the gold standard at the expense of the country's economy, the stock market crash in 1929 might had only resulted in a normal downturn of the economy. Economists and policy makers claimed to have learned their lesson, or could such a crisis hit again?
(Krugman, 2009, p. 7)

In the late 1990$^{th}$, a group of Asian economies, which accounted for about one quarter of the world production, experienced an economic downturn that had overwhelming resemblance with the 1930$^{'s}$ depression. The 90's crisis hit like a bolt from the sky; most experts predicted continued economic growth, although they already were in the middle of an accelerated downturn. And just as in the 1930$^{'s}$, the conventional economic medicine was shown to be ineffective, perhaps even counter-productive.

Paul Krugman, 2008 Nobel Prize winner in Economics wrote in his book about the current financial crises.

*"I am tempted to say that this crisis is not similar to anything we have seen before. But it would be more accurate to say that it is similar to everything we have seen before, at the same time."* (2009, p. 165; translated from Swedish by authors)

Consequently, those were not the only times the world has experienced a financial crisis. In 1980, there were the Tequila debt crises that affected Mexico and Argentina, as well as, the financial crises of East Asia, Latin America, Russia and South Africa. When the Mexican (1995) and East Asian crises occurred, their nominal currency value declined by 40 percent. Allen and Gale argue that when Asia (1997), whose economies had been the envy of the world, experienced a financial crisis, banks and financial intermediaries collapsed and Asia's stock markets, currencies and GDP fell significantly. It is further argued, by Allen and Gale, that financial crises are nothing new, *"They have not been restricted to emerging economies even in recent times."* (Allen and Gale, 2007, p. 1) Even though financial crises take place in different countries, at different time periods and for different reasons, they are similar in many ways.

The present financial crises are more widespread than previous ones, as countries financial systems are deeper connected into each other now than before. The current crisis began in United States when the subprime mortgages defaulted. Financial institutions, which are the key intermediaries in the financial system, faced a systematic risk that froze and decreased the capital in the real economy. The subprime mortgages were designed with an interest payment, whereby the mortgagees were planning to refinance to avoid increased mortgages rates (Acharya and

Philippo, 2009). The main underlying problem was that the mortgage lenders had poor underwriting standards combined with their issuing of toxic loans. The bubble exploded when investors understood that they had invested in high risk and illiquid – toxic assets, supported by mortgages and credit derivates, which forced investors to activate other short term financing. The financial crises did not only affect the traditional banks, but also Central Banks that act as lenders of last resort. The impacts of the crisis resulted in an unwillingness from traditional banks to lend money as they feared more defaulting loans. Therefore, the lender of first and last resort became the Federal Reserve. Clearly, in 2006 the housing market started collapsing as an effect of the credit boom (huge financial leverages) and an asset bubble (increased prices in the housing market). The financial crises led to an increase in write downs of financial institutions and the bankruptcy of many subprime lenders. Everything started with the bankruptcy of Ownit Mortgage Solution's in 2006, the default of New Century Financial April 2nd, 2007, the collapse of two Bear Stearns-managed hedge funds on June 20th, 2007, and the bankruptcy of the largest investment bank Lehman Brothers in 2008. (Acharya and Philippo, 2009)

"*The American crisis has spread like wildfire and reminded us of just how globally connected the financial markets are*." (Wickman-Parak, 2009)

The subprime crisis started in the United States, but was soon transmitted to other countries and even to Sweden. The impact of the financial crisis has had negative consequences for the Swedish real economy, especially in its output. Since Sweden's economy relies heavily on export, its macro economy has been negatively affected by the present global financial crises. Many of Sweden's largest industries had to reduce their output, as well as their work force. The Swedish auto industry has suffered because of the reduction in demand for new automobiles. Since the financial crisis started in Sweden, the auto demand, according to Rhoda, has decreased by 40 percent. It is argued that the drop in demand for cars has been both, unexpected and sudden. "The consequences have been more severe than anyone could have predicted."(Rhoda, 2009) Moreover, Swedish banks had to also be rescued by the Swedish Government, since they had troubles with shortage in liquidity. (Regeringen, 2009)

### 1.2 Research question

- *What characterises a financial crisis according to the literature chosen?*
- *To what extent can these literary theories on financial crises explain the repercussion of current financial crisis on the Swedish economy?*

### 1.3 Purpose

The aim of this study is to at first acquire and present the necessary knowledge regarding characteristics of financial crises from specific literary theories on the crises. In addition, we will use these literary theories to select economic indicators that will explain the repercussion on the Swedish economy as a result of the current financial crisis.

## 1.4 Delimitation

In this study our focus will be on the financial crises impact on the Swedish economy. The empirical materials are collected from the yearly data period: 2005 to 2009; it is imperative to examine the years prior to the beginning of the crisis, to get a clearer view of variables developments before financial crises started, as well as their development in the meantime.

# 2. METHODOLOGY

*The chapter introduces the reader to the study's scientific approach, as well as the philosophical positioning. Further, it familiarizes the reader with the perspective of this study, the knowledge perception and the methods used to collect the empirical material. At the end of the chapter, we have attempted to evaluate and criticize this thesis in a fair and reliable manner.*

## 2.1 Perspective

Perspective is important when it comes to how the researcher looks at and interprets reality (Lundmark, 1992, p. 46). It is therefore important that a researcher chooses a research field that is appropriated for that particular study (Lundahl and Skärvad, 1999, p. 62). We have a knowledge perspective for this study, because our aim is to learn more about the current global financial crisis and its effect on the Swedish financial market. Both of us have studied finance in advanced levels where the current financial crisis was being discussed daily. Therefore, we decided to do a literature review of the theories on financial crises, so we can share our knowledge with the readers of this study.

## 2.2 Pre-conceptions

The pre-conceptions, we as researchers have, can be divided into three parts. The first part regards general understanding of finance; the second part involves social background experiences of finance and the third one, stems from the theoretical knowledge that authors have about the field. (Arbnor and Bjerke, 1994, p. 182-3) We have studied advanced finance, which means that both of us have theoretical knowledge about the field. However, we have no practical experiences about the field that we study. The theoretical knowledge may affect the choice of the theories, but we do not believe that the outcome of the study will be affected. We have attempted to be objective in our viewpoint, with regards to the empirical data, and as such have not manipulated the collected data. We have also tried not to give our personal view on how Sweden is affected by the crisis. Our problem background, therefore, is not influenced by personal opinions. Both of us have almost equivalent knowledge within the subject however the lack of practical experience in the financial area might have caused some misjudgments or faulty inferences. To limit the number of erroneous inferences, we have built our problem background from aspects that we found relevant to the subject at hand, in order to introduce the reader to the financial crises and its damage to the financial system.

## 2.3 Ontology and epistemology

The approach used in the study originates from the traditions of the western thinking, which assumes that natural reality is created by the summation of its characteristics; meaning that reality is the sum of all parts included (Arbnor and Bjerke, 1994, p. 65). The way an author approaches and interprets impulses, the stimuli of a social nature and the material reality being studied, depends on that author's ontological view (Hackley, 2003, p. 102-3). Therefore, our ontological view will influence what solution will be suggested or recommended. Hence, it is very important that we, as researchers, consider this view, as well as the paradigm when conducting research.

The way research is driven gives authors clarity in their study and readers the opportunity to evaluate the research critically. (Bryman and Bell, 2007, p. 22)

Research in finance is closely related to economics; it involves mathematical models and statistics to interpret data which is seen as an objectivistic ontologistic position. The objectivists view is built on an assumption that the social reality is external to human beings (Patel and Davidson, 1991). When objective approach is used, the researcher has to accept the world, rules and regulations as given. Therefore, objectivism in our study means that our findings are independent from both our own point of view and the research design. However, in contrast to objectivism is subjective ontology, which aims to interpret the reality as social phenomena, where no findings can be generated without human involvement (Bryman and Bell, 2007, p. 22-5). Thus, it would be impossible to generate a truth about the finance subject as it would be depended on the understanding and interpretation of each individual interpretation of the context (Hackley, 2003, p. 103-4). To conquer that, our study has a "general view of truth", meaning that the results will generate the same conclusion if someone else wants to recreate the study. Both, theory and sample, will generate the same conclusion if the researcher assumes that the "truth is given". We are objectivists, since we aim to explain the repercussion of current financial crisis on the Swedish economy.

Epistemology is in contrast to ontology, which refers to what can be known before conducting a study and what we, as researchers, regard as acceptable knowledge. Hence, epistemology is a progression of ontological views, which to a great extent, views the world as predetermined and has positivism position. Positivism advocates the application of the method of natural sciences that studies the social reality by observing and analyzing data (Bryman and Bell, 2007, p. 16-21) Positivism assumes the world is complex, and as a science, aims to explain it by narrowing it down (Arbnor and Bjerke, 1994, p. 62-3). Thus, the researchers' role is to test theories and to provide materials that can be generalized. The interpretation of data is done through previous theoretical knowledge. In contrast to positivism is hermeneutic philosophy that lies behind the understanding of the text. In other words, the analyst needs to seek the meaning of the text that somebody else has written (Bryman and Bell, 2007, p. 574-5). Therefore, the methodological approach of our study is positivism because our aim is to study social reality by analyzing data. We believe that study, within social sciences, can be measureable in the same way as within natural sciences.

### 2.4 Research approach

The deductive approach represents the relationship between theory and research. It is the acceptable view of what is known which guides the research and influences the data collection. Deductive approach uses theories as a driven process of gathering data, while inductive approach involves drawing generalizable inferences out of observation. Clearly, theory is the outcome of research through inductive process (Bryman and Bell, 2007, p. 11-4). Therefore, our aim is not to generate a theory, but use the theories as guidelines, while collecting and analyzing the data. In order to explain financial crises, we will study different financial crises theories. Then, those theories presented become the main guide for our analysis and findings.

## 2.5 Research method

Quantitative method is often used to do a measurement of numerical data and is often linked to a research tradition that focuses on deductive, positivist and objectivist view of reality. In contrast to the quantitative method, the qualitative method emphasizes words, rather than quantification during the collection and analysis of the data (Bryman and Bell, 2007, p. 578-81). We are mostly interested in explaining and analyzing the financial, numerical data collected. Thus, we want to explain why things are the way they are when the economy is facing financial crises. We also want our findings to be generalizeable and replicable. To be certain that our findings are representative and generalizable outside the researchers, we will use secondary analysis. (Bryman and Bell, 2007, p. 169) The table 2.1 will summarize what has been discussed in the sections above.

**Table 2.1 Authors own summary of referred literature**

Fundamental differences between positivism and hermeneutic philosophies**:**

**<u>Positivism versus hermeneutic Philosophy</u>**

| **Positivism** | **Hermeneutic** |
|---|---|
| ◆ Explanation | ◆ Understanding |
| ◆ Objective | ◆ Constructionism |
| ◆ Generalization | ◆ Modification |
| ◆ Quantitative | ◆ Qualitative |
| ◆ Test | ◆ Interpretation |

In this study, we have chosen a quantitative method where secondary analysis and official statistics are used. Quantitative method can help find patterns and connections between different variables. The criticism, from supporters of the qualitative method, argues that a quantitative researcher fails to differentiate people and social institutions from the natural sciences. On the other hand, supporters of quantitative research argue that the findings of qualitative research are based on researcher’s unsystematic view about what is significant. Also their findings rely too much upon close relationships between researchers and the people study. Therefore, qualitative studies are difficult to replicate and to generalize making them less convincing than quantitative research. The conflicts between these two research strategies lie within the epistemological and ontology orientation where positivism and hermeneutic views are the key influences. To a large extent, these conflicts are changing since large numbers of books provide better and clearer recommendations on how studies that use these methods should be carried out. Thus, every study is different and uses one or both of these methods. Therefore, the most important part when choosing a research strategy is how one wants to emphasise the study (Bryman and Bell, 2007, p. 173-6, 423-5). We have selected a secondary analysis, because we want to explain the economic indicators of financial crises through secondary data and the repercussion of the crisis on the Swedish economy.

### 2.6 Reliability and validity

Reliability is mostly concerned with the consistency of a measure, where stability and internal reliability factors are involved in the measurement of reliability (Bryman and Bell, 2007, p. 162-4). Stability refers to the stability of the measurement over time; whereas internal reliability ensures its indicators are consistent. Moreover, validity refers to the measurement of "*an indicator that is devised to gauge a concept*" (Bryman and Bell, 2007, p. 165). We will elaborate further on reliability and validity at the end of our study.

### 2.7 Data collection and data processing

When applying a quantitative study, it is important that the data collection process manages to capture the sample the authors aimed to generalize; secondly, the result has to be valid in order to answer the research question and the study purpose. Otherwise, the study and the conclusion will be invalid. (Bryman and Bell, 2007) In this study we used secondary analysis to capture the sample population; our aim was to have a sample that is as close to being representative as one is likely to achieve. Another reason is that the sample sizes of secondary analysis sets are invariably attained only in research that attracts quite large resources, which are difficult for us as students to conduct. Moreover, the data is generated by highly experienced, expert researchers using large data sets that control and check quality. (Bryman and Bell, 2007). Thus, the secondary analysis is generated and collected by Statistics Sweden, Swedish Central Bank and Affärsvärlden. Further the empirical data collected will be used to prove to what extend can the literary theories on financial crises explain the repercussion on the Swedish economy as a result of current financial crisis. During the research we have chosen specific economic indicators presented in the theories and compared them with the variables in the empirical data collected. In addition, the empirical data will provide us with the actual economic indicators which will help us to answer our research question. Further, the economic indicators presented in the empirical data will be compared with the indicators chosen from the literary theories on financial crisis.

The Statistic Sweden is an administrative agency which supplies statistics, debate and research to government and other agencies (Statistiska Centralbyrån, 2009). From Statistic Sweden, we will collect data about unemployment, Gross Domestic Product, Consumer price Index, Savings ration etc. The Riksbank sets the repo rate which in the theories is called interest rate. Therefore, the repo rate will be collected from Riksbanken. The Affärsvärldens OMX will provide us with OMX index.

For this study, the data held available for Swedish and international organizations, as well as governments are used. Schnable and Hoffman used data provided by International monetary fund (IMF) in order to complete their study, as well as tables and diagrams to illustrate their result. Therefore, in this study we will explain our results by using tables and diagrams to make it easier for the reader to understand and interpret the findings (Bryman and Bell, 2007).

We will choose data from years 2005 until 2009 subject to data availability. We will choose year 2005 as a starting year, since we believe that the economy was in good shape at that time. Moreover, some of the diagrams will be created by using the Statistic Sweden data base; however, some will be measured by using Excel. More details of how the data has been processed will be demonstrated in the empirical chapter.

### 2.8 Literature search

The search for relevant literature has been done through The Umeå University Library System – ALBUM. The articles were found through the databases; Business Source Premier.
The keywords that we use are mainly acquired from the theoretical knowledge that we obtained from our initial financial courses. The table 2.2 summarizes how much is written out there about financial crises. Therefore, out of all material about financial crises we choose theories that are mostly referred in journal about financial crises.

**Table 2.2**

| Keyword | Business Source Premier |
|---|---|
| Financial Crises | 39403 |
| Subprime Crises | 2172 |
| Financial Crises + Theories | 1029 |
| Financial Crises + Minsky | 41 |
| Financial Crises Sweden | 128 |
| Kindleberger | 353 |
| Asymmetric Information Mishkin | 7 |
| Anatomy of a financial crisis | 30 |

Source: The table is created by authors

### 2.9 Sources

The data will be proved by secondary sources, meaning that we will not use any primary data. When using secondary sources, it is important that authors use sources that are trustworthy, time connected and independent (Thuren, 2005, p. 12-4). According to Johansson-Lindfors (1993, p. 87) authors need to pay special attention to the theories origins, which we have done by using articles from business source premier (EBSCO), a well well-known database. However, there are always differences between studies on financial crises because no study is identical to the other even though they stress the same field of research. We believe that the trustworthy, time connected and independent are applied in this study, because all articles used have been peer reviewed by other researchers and experts. We have tried to use theories from year 1978 and later, where only the original source has been applied, in order to assure that the theories have not been replaced with other research interpretations. The other reason to the chosen yeas 1978 is that the financial theories are more relevant for today's complicated financial system. Therefore, we believe that the theories used serve the purpose of our study.

### 2.10 Criticism of secondary analysis

When it comes to the data; all data is proved by these sources: Statistics Sweden, Affärsvärldens, Riksbanken, which, we believe, do not have any financial interest in manipulating the data because these sources provide both national and international data to other organizations, governments and businesses. Hence, we find it very unlikely that these data sources would include any purposeful manipulation. We believe the data are of high quality since the sources are regulated both by government and by international organizations. However, there is always a possibility that the data may be biased or manipulated. In addition, since this a secondary analysis one cannot fully rely ones conclusion on. The ideal data would be if we as researches had accesses to collect and analyse the original empirical data. Further, in order for us to achieve an ultimate conclusion we would need a broader and more advanced empirical data. An ideal empirical data is data that would provide us with analysis for year 2010 and beyond. Hence, a broader empirical data would better correspond to our conclusion based on the literary theories on financial crises. Further, other criticism to our empirical data is the fact that they do not provide us with the broader information to the causes for current situation on Swedish economy. For instance, in the theories, corruption, moral hazard and other physiologic aspects are among the factors that lead financial crises. Factor such as this are difficult for us to measure from the empirical data provided.

# 3. THEORETICAL FRAME WORK

*In this chapter we present the main theories on financial crisis, to provide the reader with a general knowledge on the subject to facilitate further analyzing the current financial crisis from a Swedish perspective.*

## 3.1 Different views on financial crises

It is not easy to determine a common and uniform definition of financial crises. Early views on financial crises literature were split into two camps; there were those associated with a monetary view on financial crises and those that held a broader perspective put forward by Charles Kindleberger and Hyman Minsky. Mishkin criticized both views, as he considered the monetarists view to have too much emphasis on the banking crisis, Kindlebergers and Minsky's definition was too broad. The monetarists, Friedman and Schwartz, linked the financial crises with the banking panics. According to them, a real financial crisis must lead to a reduction of the monetary base in the country (Mishkin, 1992, p. 116). They saw one specific problem with Kindleberger and Minsky's point of view; it didn't provide a precise theory of what characterizes a financial crisis. They argued that their view could lend itself to be used too broadly and justify government interventions, which might not be favorable for the economy. Friedman argued that crises that do not results in a reduction in the monetary base can't be regarded as financial crises and are instead called "pseudo crises" A rapid decline of various assets cannot be defined as a real financial crisis if it does not evolve into a bank panic. If a crisis is of "pseudo" character, the monetarist approach is for a central bank not to intervene. An intervention would rather aggravate the economic situation and rapidly create a rising inflation. (Mishkin, 1992, p. 116).

The asymmetric information analysis, provided by Mishkin, gives a framework for how disturbances in financial markets can cause a downturn in the economy. Mishkins defines a financial crisis as follows;

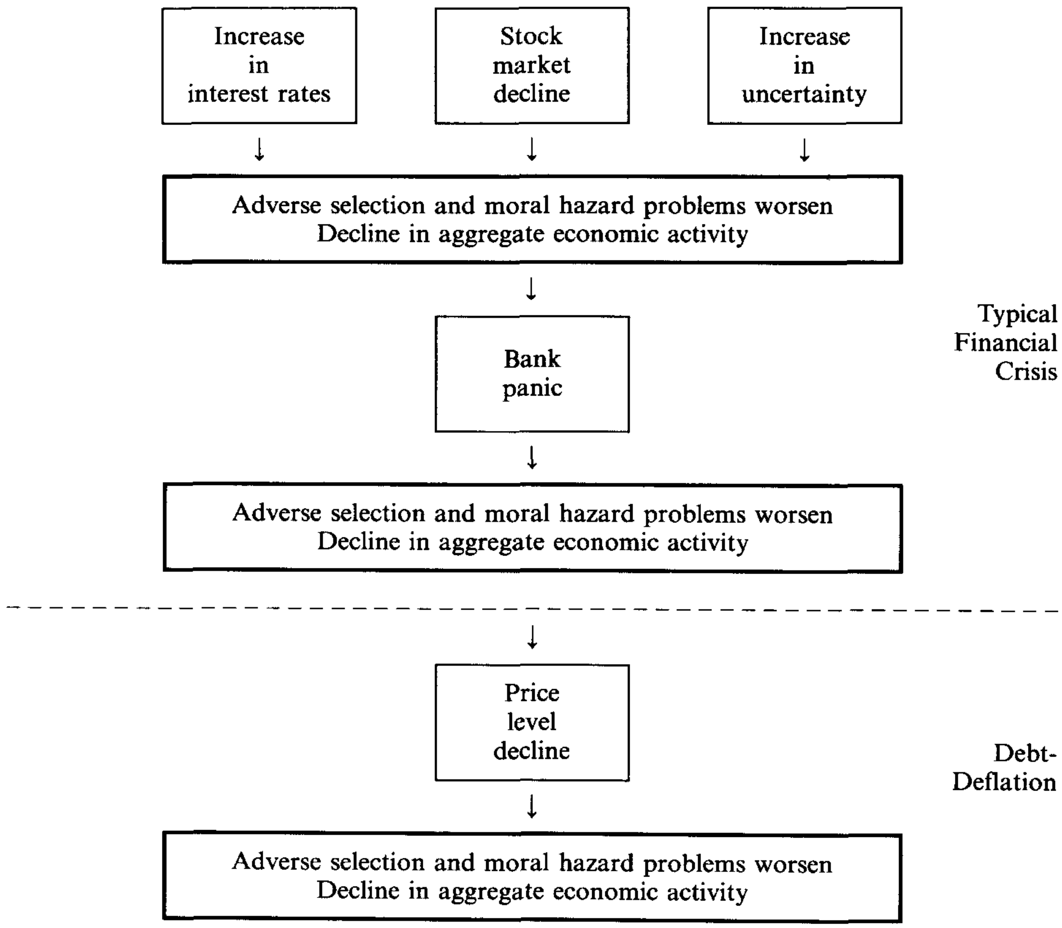
"*A financial crisis is a disruption to financial markets in which adverse selection and moral hazard become much worse, so that financial markets are unable to efficiently channel funds to those who have the most productive investment opportunities"* (Mishkin, 1992, p. 117).

The section below briefly discusses what the theoretical literature offers as explanation of financial crises. The theoretical models also guided our choices of the financial and economic indicators used in the analysis.

## 3.2 Asymmetric information

This section is inspired by Frederic S. Mishkin article “Anatomy of financial crisis”. Asymmetric information refers to the phenomenon in which one player possesses more information than other stakeholders in the financial market. Transactions, that take place in financial markets, are subject to asymmetric information, where one party does not know all that he or she needs to know about the other party to make a correct decision. This leads to problems with adverse selection and moral hazard. (Miskhin, 1992).

Adverse selection in financial markets occurs when the potential borrowers, who are the most likely to produce an undesirable outcome, are the ones most likely to be selected. Since adverse selection makes it more likely that loans be made to bad credit risks, lenders may decide not to make any loans, even though there are good credit risks in the marketplace. Moral hazard occurs in financial markets after a loan has been extended; the lender is subjected to the hazard when the borrower might engage in activities that are undesirable from the lenders point of view. They increase the probability of default. When the borrower has incentives to invest in projects with high risk, the borrower does well if the project succeeds, but the lender bears most of the loss if the project fails. Moral hazard and the conflict of interest between the lender and the borrower can result to too many lenders deciding not to make loans, and lead to suboptimal levels of lending and investments. Mishkin presents five primary factors in the economy, which can result into considerable worsening of the adverse selection and moral hazard in financial markets. This, in turn, can lead to a financial crisis. The factors causing financial crisis are: 1.) increases in interest rates, 2) stock market declines, 3) increases in uncertainty 4) bank panics and 5.) unanticipated declines in the aggregate price level (Mishkin, 1992).




*Source: Mishkin model of financial crises (1992, p. 123)*

An *increase in interest rates* and the resulting adverse selection problem can lead to credit rationing, in which some borrowers are denied loans even when they are willing to pay a higher interest rate. This occurs when individuals and firms, with the riskiest investment projects, are exactly those willing to pay for the highest interest rates. Hence, the higher interest rates lead to even greater adverse selection. That is, the increased likelihood that the lender is lending to a bad credit risk. A sharp *decline in the stock market* can lead to large declines in the market value of the firm's net worth. Net worth declines evolve with the lender's unwillingness to borrow, since the net worth plays a similar role to that of collateral in the lending process. Consequently, the decline in corporate net worth spurs incentives of moral hazards for the borrowing firms to make risky investments, because these firms, now, have less to lose if their investment fails. Mishkin means that a failure of an important financial or non-financial institution, a recession, or a stock market crash leads to uncertainties and makes it more difficult for lenders to distinguish good from bad credits (Mishkin, 1992). The increase in uncertainty makes information in the financial markets even more asymmetric, making the adverse selection problem more extensive.

Mishkin states that asymmetric information problems could be solved through a private production, and the sale of information that allow lenders to be fully informed about the individuals or firms who are needed to finance their investment activities. The source of the fourth factor, *bank panics,* is also asymmetric information. When a panic evolves, bank customers withdraw their money in fear of losing their deposit. This withdraw causes a contraction in loans and deposits which ends up in the failing banks. Asymmetric information is a vital part of this process, since depositors rush to make withdrawals from solvent as well as insolvent banks because they cannot distinguish between them. *Unanticipated declines in the price level* further decrease the net worth of firms. Debt payments are fixed in nominal terms. An unanticipated decline in the price level raises the value of the firm's liabilities in real terms, but does not raise the real value of firm's assets. Therefore, a sharp drop in price levels causes a substantial decline in real net worth and an increase in adverse selection and moral hazard problems facing lenders. The resulting increase in adverse selection and moral hazard problems will cause further declines in investments and economic activity (Mishkin, 1992).

## 3.3 The financial instability hypothesis

Hyman Minsky (1992) follows Keynes' *General Theory* from 1936, in viewing the capital system as innately unstable because of the instability of aggregate investments. The financial instability hypothesis explains the occurrence of instability in the financial sector as an increased result of inflation and an excessive use of debt deflation which losses control time to time.

The instability begins in the banking sector that is involved in a profit seeking activity. Minsky argued that banks are aware that innovation assures profits and strive to innovate the assets and liabilities they market. Thus, when bankers and businesses are profit seeking, the investment will take place by banks stretching liquidity in a way that makes the system more vulnerable to disturbance. Profit seeking firms have an incentive to borrow more against equity, when economy appears to be stable, which in turn has a destabilizing effect. Therefore, through the financial hypotheses theory, Minsky describes the impact of debt on the system and the method in which debt is validated.

Minsky divided the debt into three part; hedge, speculation and Ponzi finance. In hedge financing the payment obligation is fulfilled from the cash flow. Speculative financing meets payment commitments on the liabilities. Ponzi financing arises when the cash flow from operation is not enough to fulfil either repayment of principle or interest on the outstanding debt. Therefore, they have either to sell or borrow more, which lowers the safety of the debt holders. If the economy uses hedge financing, then the economy will be equilibrium seeking. In contrast, if the economy uses Ponzi and speculative financing, the likelihood is high that the economy is moving away from an amplified system. According to Minsky, the financial system over time will transits from stable to unstable if the economy uses any of the speculative or ponzi finances. The transformation from stable to unstable occurs when the economy moves from hedge finance to speculative and later, to Ponzi finance. If the economy over good times uses speculative finance it will face an increase in inflation. Thus, if Central Bank tries to reduce inflation by monetary constriction, the speculative finance will become a Ponzi finance, which will result into decreased net worth of the operations that have been financed by Ponzi finance.

According to Minsky the financial hypothesis model does not rely upon exogenous shocks. However, it holds that business cycles are compounded out of:

❶ The internal dynamics of capitalist economies

❷ A system of intervention and regulations that plan to keep the economy operating within reasonable bounds

The increases of innovation, the complexity of the financial system, the involvement of the government as refinancing agent of financial institutions and businesses, have made the financial system unstable.

## 3.4 Financial crises as a series of events

We move from the definition of the concept to view the financial crisis as a series of events.
In 1978 Charles Kindleberger wrote the book “Manias, Panics and Crashes” where he presents a model of financial crises. The author sees financial crises as a series of events, which in a given order go from a displacement all the way to establishing a lender of last resort. He argued that financial crises have a tendency to emerge in about ten year intervals and that this regularity would not exist if the factors solely were unique and random. He describes that a financial crisis begins from an external chock in the macroeconomic system, which he called displacement.

A displacement is a sudden, and often unexpected, external event that alters horizons, expectation, profit opportunities and behaviors (Kindleberger, 1996, p. 62). He argued that all events lead to some kind of change of the starting position, but few can be classified as displacements. Events or chocks must be large enough to be able to have any significant impact on the economic outlook (Kindleberger, 1996, p. 73). He gave war and financial liberation, as two examples of displacements. Displacements results in changes of firms profit opportunities and in some industries create new profit opportunities. When a displacement results in that the winners exceed the losers, he meant that the economy is heading towards an economic high boom. When the economy is flourishing the demand of capital from investors increase and more capital is needed. The bank’s lending increase as the prices of the underlying securities and real estate is rising. When asset values increase the optimism from investors and banks follows. The Banks optimism manifests as a laxity of their lending requirements in fear of losing market shares to other banks. An economic high boom strengthens further by extended bank credits where financial institutions grant credits which would not be approved under normal market conditions (Kindleberger, 1996, p. 35). The expansion of credit gives fuel to the flame and incentives to speculate. The transition to the next stage of the model is characterized by a massive increase in demands for goods or financial assets.

Eventually, prices increase as the production cannot satisfy the increasing demand. This attracts even more companies to the industry as the profit potential just seems to grow. We are thus in a circle of investments and income where everyone wants a piece of the action. Kindleberger uses the words Mania and Bubbles to describe this stage. He emphasizes that mania is the irrationality of the event, while the bubble symbolizes the rupture which sooner or later will occur (Kindleberger, 1996, p. 36). We are in a phase of pure speculation where the economic actors are in a state of euphoria. When prices increase in an important sector of the economy, speculations begins. Instead of buying commodities for their use, they are purchased for expected capital gains. Securities are purchased for resale purpose instead of capital income. Speculations often are created in two stages. During the first investment stage which involves households, companies and individual investors, the reaction on a displacement are limited and rational whereas capital gains play a dominant role in the second stage. In the beginning the investors get a taste of a high interest, then, they develop an appetite for large profits which can be made upon the realization of the investment object (Kindleberger, 1996, p. 50).

The two-stage-view on speculations the two groups of investors insiders and outsiders are introduced (Kindleberger, 1996, p. 52). Insiders are said to be destabilizing the market by constantly pushing up prices of securities to later sell. Hence, when the prices are at its highest the outsiders buys the securities which are at top prices (Kindleberger, 1996, p. 52). The outsider group's losses become equivalent to the insider group's profits, and the market as a whole is in deadlock. The subject of speculation varies from boom to boom and crisis to crisis. It is impossible to provide an exhaustive catalog over which assets to start the speculation game. In most of major crises there were at least two speculative objects involved and at least two markets. Just as domestic markets were linked to each other, speculations were (Kindleberger, 1996, p. 48).

After the euphoria the economy transforms into what Kindleberger describes as a financial distress. The causes for this transition is difficult to distinguish, but examples of symptoms are, sharply rising interest rates, balance of payments deficits, stagnant price increases of the speculation object and increased number of bankruptcies. After a while, more and more insiders want to get out and fewer outsiders want to get in, prices will sooner or later begin to decline. Price declines affect the value of securities which in turn lead on banks to terminate loans or refuse to grant new ones. Business houses sell their commodities, household sell their securities, industries postpone loans and prices fall further. Additional deterioration of securities leads to more liquidations (Kindleberger, 1996, p. 135). When firms go bankrupt its damaged loans and banks goes bankrupt. As banks are failing the depositors withdraw their savings in fear of losing their money. The credit system is shivering and the race to liquidity is in full swing. A crash later occurs when asset prices suddenly drop or when an important bank declares bankruptcy.

### 3.4.1 The irrational market

Kindleberger claimed that manias and panics have a relationship with irrational thinking and mass psychology (Kindleberger, 1992, p. 48). He argued that people change at different stages in a continuous process, they begin rational to later gradually, and faster lose contact with reality. The rationality differs from groups as brokers, investors or speculators are in different stages of their rationality. Irrationality can occur when economic players choose the wrong model, neglect to take into account special and important information, or even suppress information that is not consistent with the model that has implicitly been adopted (Kindleberger, 1992, p. 48). Mass psychology is well known as a temporary deviation from rational behavior. We meet this phenomenon in many economic models, as for example in the demonstration effect, which is when developing countries adopt a standard of consumption beyond their ability to produce on their own behalf. Another example can illustrate a person who does not want to be worse than his neighbor, in terms of consumption, and when his income later decreases, he refuses to cut down on consumption at the same pace as when the consumption increase when the income rose. One apt example is when the banker Martin said "When the world is crazy, we must in some extent follow" when subscribing shares in the south sea company in 1720 (Kindleberger, 1992, p. 49).

### 3.4.2 Lender of last resort

The lender of last resort stands ready to prevent that real and non liquid financial assets transform into money by making money more accessible (Kindleberger, 1992, p. 193). How much? To whom? Under what conditions? When? All these questions arise from the fundamental dilemma that if the markets know they are going to be saved, they will feel less responsible with their money, which in turn will affect how the capital markets will function during the next boom. Kindleberger argued that central banks should act in a way that stop panics by giving lavish loans and in a different way which lets the market clear itself to prevent future panic outbreaks (Kindleberger, 1992, p. 196). Some point out the risk of that an existing lender of last resort encourages speculations. And others see it as very important to deal with liquidity shortage and in stopping panics from occurring while bringing the markets back in order (Kindleberger, 2005, p. 32).

## 3.5 Behaviour Finance

In order to understand the financial crises one needs to take psychological aspect into consideration. Akerlof and Shiller are two authors that try to explain the financial crises through a psychological perspective which they call "Animal Spirits". Akerlof and Shiller, reject the "rational man" through "behavioural economics" which is a conventional economic theory that is in favour of human motivation and capacities. They argue that if individuals were rational the depression would not exist, but since the depressions exist, the rational model is not valid. Thus, the key to understanding depressions lies in motivation and behaviours that are irrational.

Akerlof and Shiller advocate that irrationality comes from the uncertainty in the market that occurs during a recession. They argue that decision are made through "a spontaneous urge to action" when individuals are uncertain (Akerlof and Shiller, 2009, p.3).

"*We must pay attention to the thought patterns that animate people's ideas and feelings, their animal spirits. We will never really understand important economic events unless we confront the fact that their causes are largely mental in nature.*" (ibid, 2009, p. 1)

Thus, they used a behavioural model that is called animal spirits which includes non rational motivation such as "confidence", "fairness", "money illusion", "corruption", "antisocial behaviour" and susceptibility to "stories" to explain the financial crises. According to Akerlof and Shiller, the prices in the market are affected by pervious experiences of high returns on assets. Since no one can predict ups and downs in the market, the purchasing power in the market will increase until the bubble is created. (ibid, 2009) People buy assets even though the prices are at its highest level since neither the economist nor the government official warns people about the creation of the bubble. This is a sign of irrationality as people are buying assets even though prices are increasing. The ignorance of how the economy works and the trustworthiness of a "new era" thinking which is associated with low inflation, low interest rate, and instrument with low risk are two of the main key that lead to creation of a boom in the market. The booms are also a results of increased “corruption scandals” in the economy such as prohibition of lows and financial scandals like mortgage fraud. Thus, when the “new era” turns out to be a false dawn by an asset-price crash the market falls into financial crises.

Financial crises will decrease “confidence” in the economy which will result in frozen credit market where lenders do not trust that they will be paid back. Therefore, those who want to spend find it difficult to obtain credit and those who supply the goods find it difficult to obtain working capital. Clearly, the trust during good time replaces with deep mistrust during financial crises. When the confidence is high people will buy, however, when the confidence is low people will withdraw and sell (ibid, 2009).

Moreover, “Corruption” is another factor that occurs during financial crises. Akerlof and Shiller argues that corruption has been involved in three of economic contraction in the United States- the recession of 1990$^{th}$, the recession of 2001 and the recession of 2007 and will most likely be repeated. In the 1990$^{th}$ recession involved confidence losses because of Iraq war and the spike in oil prices. A factor of the crises was the savings and loan act, which allowed the S&Ls to act as a bank that lend money primarily for mortgages. The act allowed them to lend much more aggressively but left government as guarantor of their deposit. This created opportunity for corruption, which was exploited by certain S&Ls, which made bad loans and subsequently failed. The S&Ls had granted a large number of mortgages in fixed interest rate. The inflation rose and in the same time as interest rate which meant that cost of fund where higher then receipts that S&L were receiving in form of mortgages. S&Ls failed and the government had to pay a bill of $140 billion on compensation. The crises of S&L caused a lot of economic turmoil that disturbed the entire economy in US during the recession. The head of General Accounting Office said “It’s my very strong feeling that right now we have a banking system that does not enjoy a whole lot of confidence”. Akerlof and Shiller argues that innovation and culture changes are the main reasons why corruption occurs, and are the within the realm of animal spirits (ibid, 2009, p. 26-39).

Other factors that are involved in financial crises are “fairness” and “money illusion” which explain the behaviour of employment and wages in a depression. Akerlof and Shiller argue that employers do prefer to economize on labour costs by laying off workers instead of cutting wages. Employers through “money illusion” overpay their works in order to boost morale and loyalty. “Money illusion” is a failure of employers to distinguish between the wages received and the purchasing power. According to Akerlof and Shiller, unemployment increases more rapidly during financial crises, because the employers instead of making entire work force unhappy by cutting wages and keep workers; they reduce the work force and make only the laid-off workers unhappy. Thus, Akerlof and Shiller and argues that cognitive and emotional factors (workers do not understand the purchasing power of wages, unhappy workers can demoralize the workforce) are two other factors of irrational thinking that can explain the unemployment during depression. Further, when the demand for goods declines, unemployment increases and the bankruptcies raise the processes of the “story” that will take place. Stories are a process that the people tell to themselves, about how others behave and about how the economy behaves as a whole.(Akerlof and Shiller, 2009)

"*In turn much of human motivation comes from living through a story of our life, a story that we tell to ourselves and that creates a framework for motivation.*" (ibid, 2009, p. 51)

Akerlof and Shiller argue that stories don not just explain the facts, they are the facts. In order to understand the stock market boom in 1990s, we must look on the driving story of the entrance of Internet. Invention and exploitation of Internet in mid-1900s caused everyone to use the internet. That produced a stock market boom which in turn led to an economic boom and ended in the beginning of 2000. The Internet boom was based on confidence that Internet will last forever. Thus, the economy got carried away with the story. Therefore, Internet is called the new era of stories which suggest that differences in confidence have many effects on the economy further than on consumption and investment. (ibid, 2009 p. 51-56)

## 3.6 Krugman's contribution

Paul Krugman (2009) introduced a framework about how financial crises emerge and how to look at the problem. The indicators used to looking in what stage of business cycle the economy is heading, are: employment, industry output, private consumption, GDP etc. Thus, when these indicators worsen an economy downturn is bound to happen, according to Krugman. His theory of financial crises includes: a burst real estate bubble, a wave of bank rushes, a liquidity trap, disturbances in international capital flows and, a wave of currency crises. (Krugman, 2009, p. 165)

### 3.6.1 Real estate bubble

When the real estate prices increase to a level where purchasing of accommodation are unapproachable for many individuals, even if it is offered without deposits and at really low interest rates, the purchasing power drops. The prices will continue to increase for a while before everything falls apart. The house market is different from other markets because the prices do not change to the same extent as it is the case with the stock market. The sellers do not reduce the prices before it is obvious that they are not going to receive any bids. Thus, when prices start to decline, people can make their payments which affect both lenders and the banking system. The bubble bursts when banks do not make loans and people who bought real estate lose large amount of wealth. (Krugman, 2009, p. 166-9)

### 3.6.2 A wave of bank rushes

The underlying problem of the bubble bursts comes from the source of lending that do not need any warrants. As a result, the financial system will become more vulnerable and riskier. Krugman named a lending system without warrant shadow-banking. When financial markets realize that the system is getting riskier a bank rush will take place. (Krugman, 2009, p. 170-2)

The shadow-banking system will lose confidence, which leads to an evil cycle, where people start selling their assets in order to pay their debt. The financial system will get even more vulnerable, which results in additional instability and reduction of asset's prices even further. (Krugman, 2009, p. 170-2)

Moreover, a further result will be seen as the credit requirement increase further and some of the financing will be recalled. As a result, more assets will be enforced to sell-out. Therefore, a small amount of doubtful assets can destroy the confidence in the entire financial market. When the shadow-banking system starts shrinking, many borrowers will go back to conventional banks. Thus, one of the main aspects of financial crises is that the banks credit volume increases. (Krugman, 2009, p. 170-2)

### 3.6.3 A liquidity trap

The Central Banks main responsibility is to control the interest rate and, if needed, to provide the conventional banks will liquidity. When financial instability emerges the day-to-day money rate reduces to make lending between conventional banks and businesses easier. When the economy is in good shape, it usually works very well, however, when the economy is in downturn the Central Bank's lack of strength is most obvious when it comes to the more risk-taking borrowers. Furthermore, even though the interest rate is at low, some borrowers are refused credit and some businesses will still need to pay a high interest rate. When economies are facing financial crises the interest rates that are important for the consumption and investment will increase regardless how much the Central Bank reduces the interest rate. Moreover, if conventional banks are not in the centre of the crises, the borrowing from Central Bank would not help to the extent that it could have done. Therefore, the conventional monetary policy looses track over the real economy no matter how much the Central Bank tries to reduce the interest rate. The mistake, that Central Bank often makes, is that it tries to give support to the credit market which is also offered by the private sector. (Krugman, 2009, p. 173-6)

### 3.6.4 A disturbance in international capital flows

A large portion of the increase in the financial globalization in the past years has been due to investments from highly leveraged financial institutions. When something goes wrong in one country, investments work as a transmission mechanism. In other words, when crises start in one country it will fast affect other countries. (Krugman, 2009, p. 169-179)

### 3.6.5 A wave of currency crises

Carry trade refers to borrowing in countries with low interest rates and lending to countries with high interest rate. It is highly profitable, as long as nothing goes wrong, but everything has its end, even currency trade. Hence, when a high interest country looses confidence because its banking system is in trouble, the low interest rate countries will stop borrowing money. This leads to a self-increasing effect, where capital will not flow out of the low interest rate country which on the other hand increases the value of its currency. Thus, when capital does not stream into the emerging markets, the currency's value will crash. This leads to huge capital losses for those who have borrowed in one currency and have lent in another. (Krugman, 2009, p. 176-8)

A financial crisis, that involves a currency value collapse, starts with a panic of the interest rate trade as soon as one country decides to reduce the money supply. The currency value will increase, but when the capital cannot flow into the country anymore, the currency will decline. Hence, this leads to large amount of capital losses for those who have borrowed in that currency and have lent in another. (Krugman, 2009, p. 176-8)

## 3.7 Two important theoretical studies

The variables are not only influenced from theories discussed previously but also from previous studies. Therefore, a short summary of two different studies will be presented below and after that the variables will be introduced.

Schnable and Hoffman studied different financial crises by looking at the money supply. Among other crises, Schnable and Hoffman studied the New Economy bubble (Internet Bubble) where they looked at the money supply and the interest rate. They found that US Federal Reserve Bank (FED) increased the money supply by 183 percent and the Central Bank of US and Europe had cut the interest rate so much, that it became negative in the short run. Both, FED and European Central Bank, aimed to stimulate the economy by cutting the interest rate. Thus, the FED cut the interest rate rapidly to a historical low of 1 percent. They argued that generous global liquidity conditions and low-cost liquidity contributes to irrational overinvestment booms that make economic miracles self-fulfilling. They further argue that it is more likely that bubble burst in an environment of ample liquidity supply. (Schnable and Hoffman, 2009)

Kamin did a paper survey; a broad array of data where he compared the scope and impact of three emerging markets in the midst of a financial crises: the debt crisis of the 1980s, the Mexican financial crisis of 1994-95, and the international financial crisis of 1997. The impact of the crises was done by studying the key macroeconomic variables; US interest rate, inflation, Gross Domestic Product (GDP), etc. He found that, in all cases the crises led to sharp declines in economic activity and the Consumer Price Index (CPI), whereas there was no change in the US interest rate. (Kamin, 1999)

## 3.8 Theory summary

The theoretical chapter illustrates different views on financial crises. Kindleberger and Minsky contributed with a broad perspective on financial crises, and describe it as a series of events that take place in a given order. Mishkin defines financial crises as a worsening of adverse selection and moral hazard where the financial markets are unable to efficiently channel funds. The main drivers according to Mishkin are: increase in interest rates, stock market declines, increases in uncertainty, bank panics and unanticipated declines in the aggregate price level.

Akerlof and Shiller treat the psychological aspect of a financial crisis. According to them, a financial crisis evolves as a result of five factors; confidence, fairness, corruption, money illusion and stories. Akerlof and Shiller ignore “the rational man” and argue that irrational thinking causes financial crisis.

Krugman explains the financial crises as a burst real estate bubble, a wave of bank rushes, a liquidity trap, disturbance in international capital flows and, a wave of currency crises.

# 4. EMPIRICAL DATA

*This chapter presents the empirical material that serve as a base for identifying the repercussions of the financial crisis on the Swedish economy.*

Our review of literature has revealed a number of relevant variables that are essential to investigate, in order to explain *to what extent these literary theories on financial crises can explain the repercussion of current financial crisis on the Swedish economy.* It is obvious that economic indicators such as stock market index, consumer price index, interest rates, unemployment and gross domestic product are relevant to investigate, in order to explain the impacts on the Swedish economy. Thus, the variables we are going to analyze are: repo rate, monetary supply, stock index, savings ratio, consumer price index, unemployment and gross domestic product.

## 4.1 Repo rate (interest rate)

Diagram 4.1 illustrates the changes done in the repo level by the Swedish central bank, Riksbanken , from year 2005 to 2009.

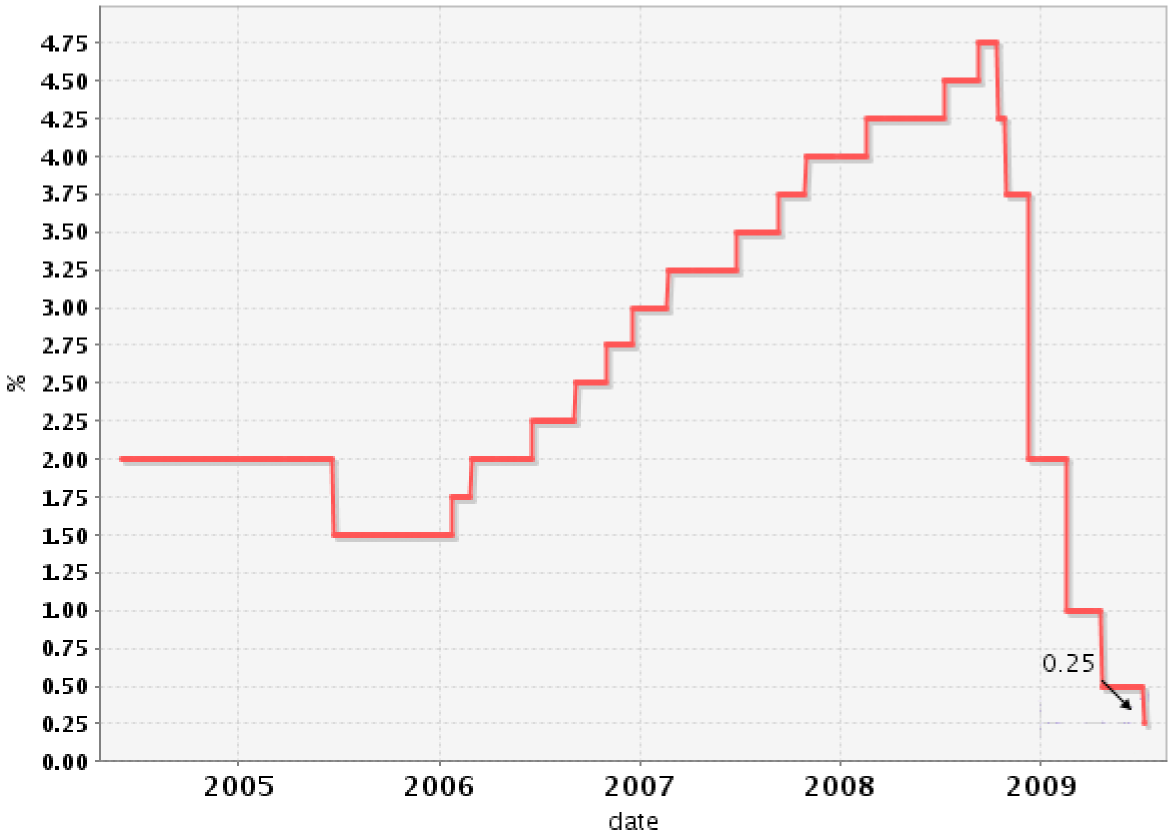



*Diagram: 4.1* *Source: www.slopedcurve.com*

Riksbanken increased the repo rate thirteen times with 0,25 percentage points each time from 2006-01-25 to 2008-09-10. This resulted in an increase from 1,75 to 4,75 per cent. The Swedish central bank later decreased the repo rate five times during 2008-10-15 to 2009-07-08. This resulted in a decrease from 4,75 to 0,25 per cent.

## 4.2 Money supply

The diagram illustrates the money supply (M3) in Sweden from January, 2005 to March, 2009. The diagram is created by the Statistics of Sweden. Comprehended in M3 are coins, banknotes, certificate of deposits and bank deposits.

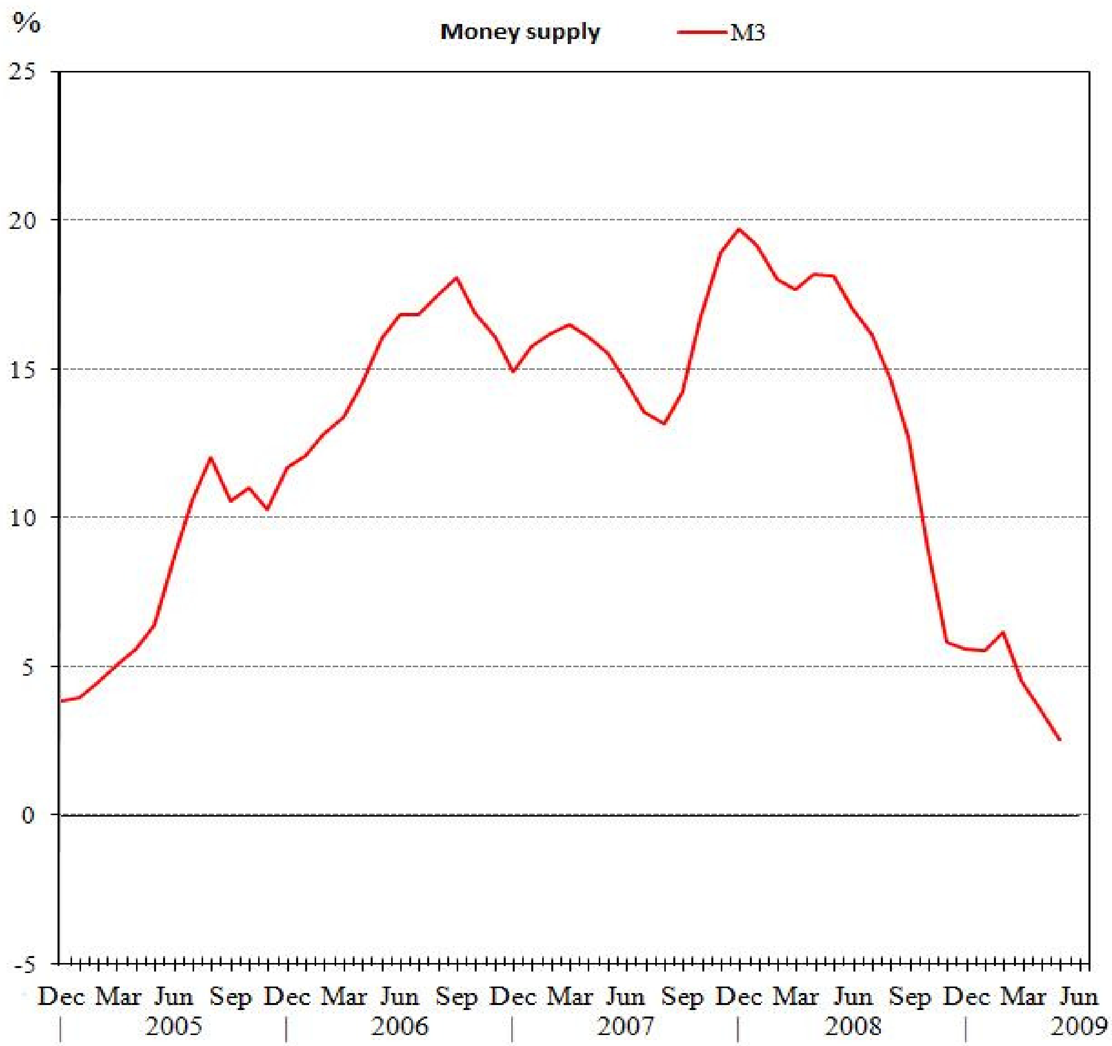



*Diagram 4.2* *Source: Statistics of Sweden 2009*

M3 increased with 14,2 percentage points from January, 2005 and September, 2006. M3 later decreased by 3,7 percentage points September 2007. The monetary supply increased rapidly between January 2005 and September 2006 (+14,2 percentage points). M3 later decreased with 3,7 percentage points up until September 2007 to later increase rapidly to its highest level of 19,7 per cent in December 2007. M3 dropped heavily from September 2007 to June 2009 (- 17,1 percentage points).

## 4.3 The Affärvärldens generalindex (OMXAFGX)

The index demonstrates the average stock market development on the Swedish stock exchange from January 2005 until May 12, 2009. The table has been created by using the Affärvärldens data collocation.

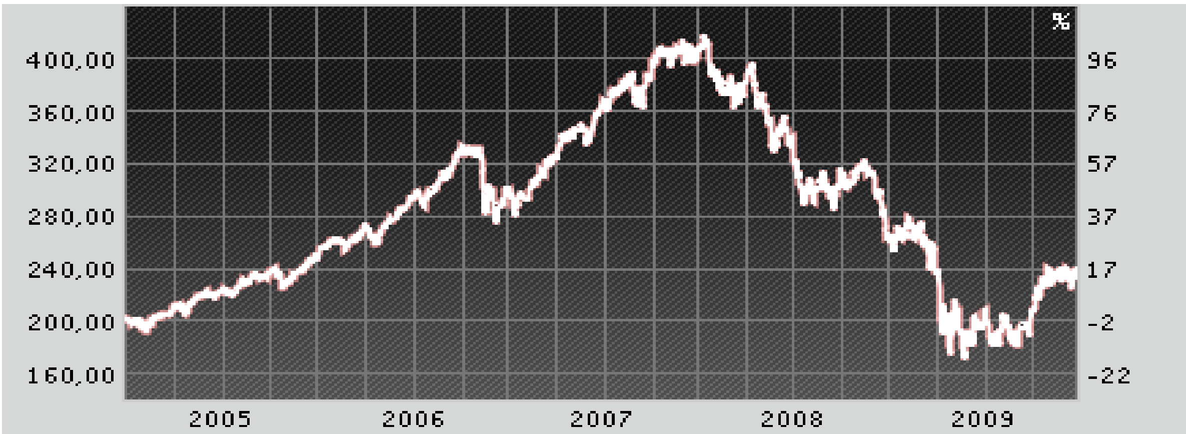



*Diagram 4.3* *Source: Affärsvärlden 2009*

The index increased from the beginning of 2005 until the end of 2007, when the stock index was at its highest level. The stock index started to decline in the beginning of 2008 and it has continued declining until April 2009. However, a small change is seen in the beginning of May, 2009, where the OMXAFGX started to increase slowly.

## 4.4 The household saving ratios

The diagram 4.4 is created by Statistic Sweden and illustrates the Households Savings Ration from year 2005 to year 2008.

%

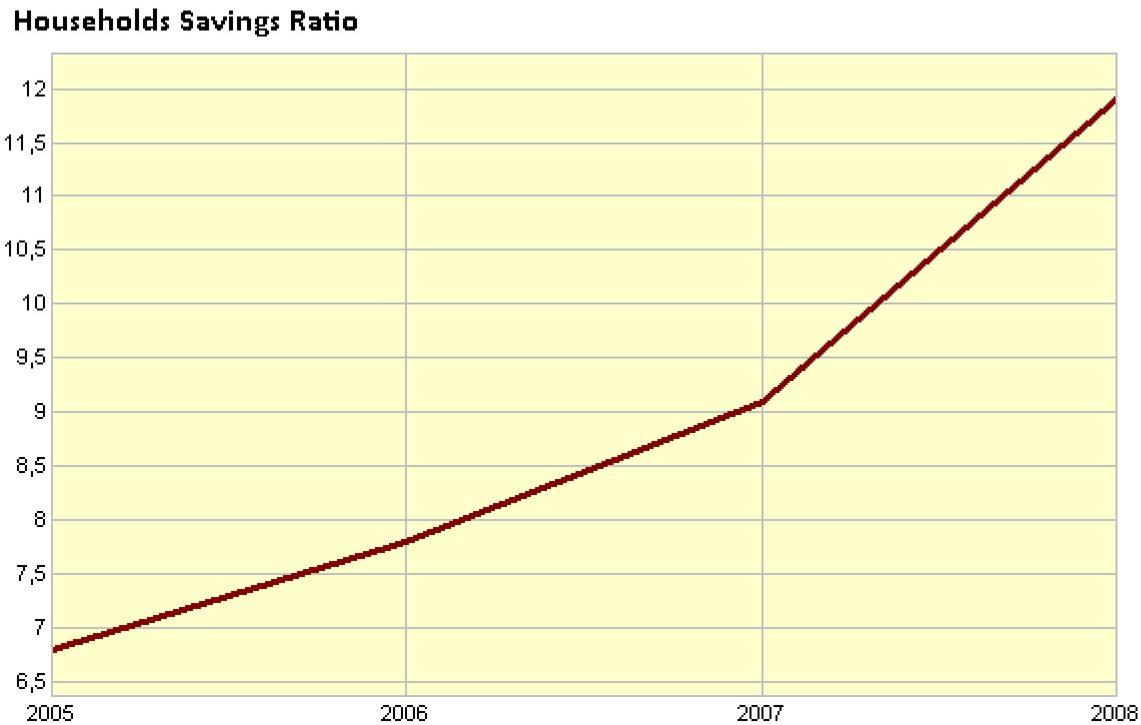



*Diagram 4.4* *Source: Statistics Sweden 2009*

Diagram 4.4 represents the change in households savings from the fourth quarter of 2005 until the fourth quarter of 2008. The savings ratio has increased since the last quarter of 2005, however, the rise is much larger between 2007 and 2008 than what it was between year 2005 and 2006. The savings ration has increased from 9.1 to 11.9 between the fourth quarter of year 2007 and the last quarter of year 2008.

## 4.5 Consumer price index (CPI)

Diagram 4.5 is created by Statistic Sweden and demonstrates the change in the Consumer Price Index (CPI) in Sweden from the first quarter of 2005 to the first quarter of 2009. The change in the CPI measures how the prices of goods and services for private consumption develop over time. The CPI is calculated monthly out of the price changes of goods and services.


*Diagram 4.5* *Source: Statistics of Sweden 2009*

The Consumer price index has increased slowly every year since January 2005. The largest increase was from January, 2008 to October, 2008. The Consumer Price Index had its peak in October, 2008 when it was at its highest level (305). The decline began in October, 2008 and fell to 298 in January, 2009. CPI started to increase again in January, 2009.

## 4.6 The unemeplomant rate

Diagram 4.6 is created by using the Statistic Sweden's data. The table displays the unemployment rate in percentages of Swedish citizens between 16 to 64 years of age.

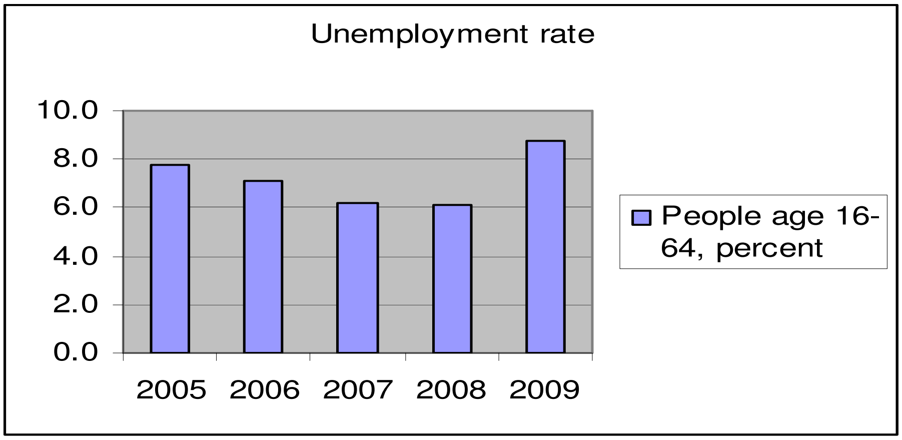



*Diagram 4.6* *Source: Statistics of Sweden 2009*

The unemployment rate was 7.8 percent year 2005 and has declined since. The unemployment rate was at its lowest in 2008 when it was only 6.1 percent. The unemployment rate is predicted to increase to 8.7 percent in year 2009.

## 4.7 Contribution to percent change in GDP, 2005-2008

The diagram 4.7 has been created by the Statistic of Sweden. It illustrates the Gross Domestic Product change from the first quarter of year 2005 until the fourth quarter of year 2008. The diagram illustrates the change in net export of goods and services, stock investment, real gross investment, public consumption and domestic consumption.

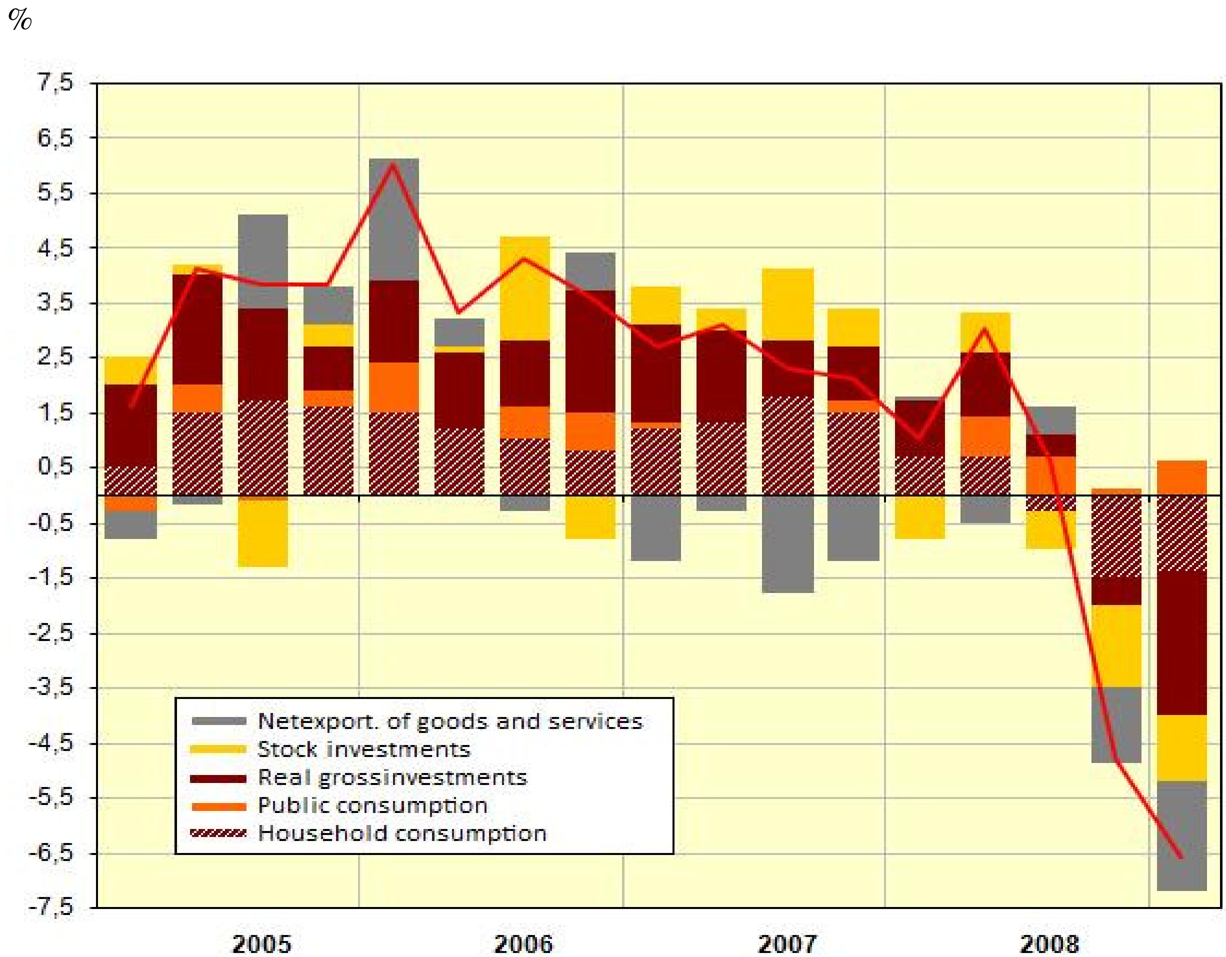



*Diagram 4.7* *Source: Statistics of Sweden 2009*

The Swedish Gross Domestic Product (GDP) has decreased from 0.3 percent in the third quarter of 2008 to minus 4.8 percent in the fourth quarter of the same year. The GDP decline has been mostly affected by a reduction in net export, stock investment and domestic consumption.

# 5. ANALYSIS AND RESULTS

*This chapter is dedicated to the discussion of our empirical results and theories, with the intention of answering our research questions. In order to give the reader a logical structure, the analysis will be structured in the following way. The first section will analyze interest rate and money supply and the end of this chapter will analyze the Gross Domestic Product of Sweden.*

## 5.1 Repo rate

The repo rate increased with 3,75 per cent from 2005 to 2008. (in the beginning of the process) An increased interest rate is one of Mishkin's five factors which cause financial crises. He argued that increase interest can lead to credit rationing in which some borrowers are denied loans even when they are willing to pay a higher interest rate. The Swedish central bank's sharp reduction of the repo rate during 2008 to 2009 was an attempt to stimulate the Swedish economy (when the bubble had burst). Krugman argued that when the economy is experiencing an economic downturn the Central Bank often lacks the strength to support the more risk-taking borrowers. This situation can be related to the present economic situation where the repo rate has been reduced close to zero, combined with a low business activity. The explanation for this situation, according to Krugman, is that individuals and business still need to pay high interest on loans, even if the repo rate level is low. He meant that Central Bank, most of the times, falls behind business cycle and has a hard time predicting the upcoming of financial distress. This can explain Riksbankens panic-like attempt to stimulate the Swedish economy with large reductions of the repo rate during the end of 2008 and 2009. Krugman argued that when economies are facing financial crises the interest rates that are important for consumption and investment will increase no matter how much the central Bank tries to reduce the interest rate. Furthermore, when conventional banks are not in the center of the crisis, as it is the case in Sweden, they lose their strength, which has been illustrated by the economic situation in Sweden.

## 5. 2 Monetary supply

The money supply in Sweden increased during the economic boom before the crisis hit. Kindleberger argued that an economic boom strengthens further by extending bank credits where financial institutions grant credits which would not be approved under normal market conditions. This reinforces Kindleberger statement that an increase in money supply and the resulting credit expansion is one important stage that leads up to financial crises.

He further argued that banks optimism manifests as a laxity of their lending requirements in fear of losing markets shares to other banks. This has a close resemblance with what happened in Estonia, Latvia and Lithuania where the Swedish banks competed for markets shares while reducing their credit requirements (Scott, 2008). This also follows Minskys' argument that no difference lies between the banks behavior compared to the rest of the entrepreneurs in a capitalist economy. For instances, when there is a lot of money in circulation, bankers take advantage of this and are assured profit by financial innovation that stretch liquidity in ways that make the system more vulnerable to disturbance. Schnable and Hoffman argued that generous global liquidity conditions and low-cost liquidity contributes to irrational overinvestment booms that make economic miracles self-fulfilling. They further argue that it is more likely that bubble burst in an environment of ample liquidity supply, which is consistent with Sweden's economic situation before the crisis. Friedman argued that a crisis which does not lead to a reduction of the monetary base cannot be regarded as a financial crisis as such and are instead called "pseudo crises". After the crisis hit hardest in Sweden September 2008, with a large decrease in stock market, the money supply decreased heavily which supports Friedman's view what characterizes a "real" financial crisis.

## 5.3 Stock index

The Swedish OMXAFGX stock index declined from 100 percent to a minus level when the financial crises started in 2008. The OMXAFGX has not recuperated to its original level yet; however, we see a small recovery. The decline in the Swedish stock index market could be explained by Mishkin's theory. According to Mishkin, a stock market decline leads to decreases of firms' net worth and as a result can evolve in that lenders become unwilling to lend as new worth play a similar role as collateral in the lending process. When the collateral decreases it provides less protection for lenders. The sharp stock market decline can also be clarified by Kindleberger ideas on irrational thinking. The decline in stock index market may have occurred because Swedish investors may have neglected to take into account special important information that is not consistent with their model (Kindleberger, 1996). Another cause to the decline could be the lack of information available for investors to foresee the outbreak of the crisis.

## 5.4 Savings ration

The savings ration in Sweden increases with 2.8 per cent during 2008 which can be explained by an increased uncertainty and a loss of confidence in the financial market. People may prefer to save where they can receive higher interest rate instead of investing. The other explanation according to Mishkin can be the rejection of loans from the banking industry which forces people to save. Krugman on the other hand argues that interest rates will increase as a result of failing shadow-banks. The confidence will then decrease as people have lost large amounts of capital. Krugman further argues that banks will refuse lending no matter how much a Central Bank reduces the interest rate. When the confidence is low depositors will withdraw their savings in fear of losing their money. Thereafter, the credit system will start shaking and the race to liquidity will be in full swing. Further, another theory giving explanation to increased saving ratio is Akerlof's and Shiller's, which is similar to Mishkin's and Krugman. They argued that financial crises will decrease "confidence" in the economy which will result in frozen credit market where lenders do not trust that they will be paid back. Therefore, those who want to spend find it difficult to obtain credit and those who supply the goods find it difficult to obtain working capital (ibid, 2009). This leads to investors saving rather than investing, according to the graph the Swedes have been saving more in 2008 than in the previous years. Clearly, this is a cause repercussion of current global financial crisis.

## 5.5 Consumer price index (CPI)

The CPI has decrease in the end of the 2008 and the trend continued in 2009. The CPI had a sharper increase until the end of 2008 however, which according to Minsky is one of the indicators which contributed to the instability in the financial market. Therefore, when Central Banks try to reduce inflation by monetary constriction, the financial system may become unstable. We can only use Minsky's theory to explain the cause of a high CPI to some extent. He argues that there are three different instruments that lead to a high inflation. Minsky divided the instruments into three part; hedge, speculation and Ponzi finance. The transformation from stable to unstable financial situation occurs when the economy moves from hedge finance to speculative and later, to Ponzi finance. If the economy over good times uses speculative finance it will face an increase in inflation. According to the 4.5 graph the CPI in Sweden was at 305 as highest in the beginning of the financial crisis. The conclusion to be drawn from this could be that these instruments could have caused a slippery-slope effect on the financial crisis. In addition according to Minsky high CPI is one of the indicators to an unstable financial system. Based on the current high CPI in Sweden one can argue that it is a repercussion of the financial crisis. Another theory on the financial crisis that we have used is the animal spirit by Akerlof and Shiller (2009). They argued that a "new era" thinking which is associated with low inflation, low interest rate, and instrument with low risk are the main keys that lead to creation of a boom in the market. The inflation in Sweden was at its highest level in year 2008 compared to other years which are illustrated in CPI graph 4.5. Therefore low inflation cannot support the creation of the boom in Swedish market as the inflation was higher than the other four years in Sweden. In addition, Akerlof and Shiller theory does not give the necessary explanation to the cause of the increased CPI in Sweden before the beginning of the financial crisis.

## 5.6 Unemployment rate

According to the statistics of Sweden 2009 the unemployment rate has increased with 2.6 percent since the financial crises started in 2008. The theory that could possibly give expiation to the increased unemployment rate in Sweden is the "Animal spirit" by Akerlof and Shiller. In their attempt to explain the increased unemployment rate during financial crisis they present the concept "fairness" and "money illusion" as a behaviour of employment, wages received and purchasing power. According to Akerlof and Shiller, unemployment increases more rapidly during financial crises, because the employers instead of making entire work force unhappy by cutting wages and keep workers; they reduce the work force and make only the laid-off workers unhappy. In addition, these cognitive and emotional factors (workers do not understand the purchasing power of wages, unhappy workers can demoralize the workforce) are two other factors of irrational thinking that can explain the unemployment during depression. Further, when the demand for goods declines, unemployment increases and the bankruptcies raise the processes of the "story" that will take place. Stories are a process that the people tell to themselves, about how others behave and about how the economy behaves as a whole. (Akerlof and Shiller, 2009).

Moreover, the increase of unemployment can also be explained by Kindleberger's thoughts on irrationality thinking, where economic actors choose the wrong model and refuses to take into account important information when making a decision. Additionally, we believe that the main explanation to the increased rate of unemployment is due to an in increased number of bankruptcies and the factors presented in the "Animal Spirit" theory.

## 5.7 The gross domestic product (GDP)

The GDP had a peak at 3 percent in 2008 before is started to decline. The peak can be explained by Kindleberger (1996). His theory "Financial Crisis as a Series of Events" presents two major events/ displacements that can have a significant impact on the economic outlook; War and Economic Liberation. Displacements results in changes of firms profit opportunities and in some industries create new profit opportunities. When the economy is flourishing the demand of capital from investors increase and more capital is needed. The expansion of credit gives fuel to the flame and incentives to speculate. The transition to the next stage of the model is characterized by a massive increase in demands for goods or financial assets. The conclusion that could be draw based on the Swedish decline of GDP as an explanation of "Financial Crisis as a Series of Events" is because of the Economic Liberation globally and domestically. The economic libration could have given opportunity for speculation which has lead to a financial crisis.

At the end of 2008 the GDP declined to minus 4.8 percent. The GDP includes net export, stock investment, real gross investment, public consumption and domestic consumption. The decrease of GDP could be explained by Mishkin's theory which argues that the increase of adverse selection and issues of moral hazard will cause further declines in investments and economic activity. In conclusion, a decline in the GDP could be a result of declines in economic activity. In addition Mishkin's theory presents another slippery-slope effect on the decline of the GDP process. The increase of the adverse selection (borrowers that take high risk investments) leads to issues of moral hazard for the lenders (banks are uncertain whether to lend or not) because of the fear of adverse selection. This kind of dilemmas leads to decline in investments which will slow down the economy activity and result in reduced GDP.  Furthers, this could be an expiation to the reduction of the GDP in Sweden.

## 5.8 The Swedish development in a theoretical interpretation

If we reconnect with the section 5, it is obvious that the current financial crises have had a negative impact in the Swedish macro economy. The stock market has declined to its lowest level since year 2005. The savings has increased while investment has declined since the crises started in Sweden 2008. Moreover, the Swedish Central bank has decreased the repo rate in order to stimulate the economy while the gross domestic product declined to a negative level. The unemployment rate rose to its highest level since 2005 whereas the consumer price index has had a sharp decline.

There are some aspects that make this crisis different from its predecessors. First, is that the crisis had a large part of its origin in the development of new financial products that opened up new investment possibilities. Second, is that the global dimension of the current crisis is due to an increased connectivity of the financial system. Minsky's description of banking as an extensive profit seeking activity with full awareness that financial innovation assures profits is in our view a valid argument. It has been confirmed that conventional banks as well as shadow-banks stretched liquidity in ways that make the system more vulnerable to disturbance which explains many bank failings including the collapse of Lehman Brothers.

Charles Kindleberger saw financial crises as a series of events that takes place in a given order. He contributed with a broad explanation on how bubbles are created and why they later burst. He argued that financial crises start with some kind of chock in the macroeconomic system that he called displacement. It is obvious that a displacement has taken place, although it did not originate from the Swedish financial market. Kindleberger emphasized that a credit expansion is one important stage that cannot be excluded in what leads to financial crises. Even though Sweden's credit expansion was not as extensive as United States, we can see similarities in the behavior of Swedish Banks, in the sense that both of the countries gave lavish loans with minimal collateral, as in Sweden's example of loans to Baltic countries (Scott, 2008).

Krugman argues that shadow-banking is the main problem in the current crises and not the conventional banking system. Thus, when the shadow-system looses confidence people will start withdrawing their deposits and sell their assets. The empirical data has shown the savings increased. Krugman argues that when the shadow-banking system starts shrinking, many borrowers will return back to conventional banks. Therefore, the increase of savings ratio could be explained by an increase of withdrawing from shadow-banks and increased savings at conventional banks in Sweden. Moreover, the Swedish Central bank reduction of the repo rate has not have the desired impacts on the real economy since the gross domestic product has decreased, the unemployment increased and the consumer price index has declined. Thus, our empirical data supports Krugman's theory about Central banks losing strength when the conventional banks are not the central of the financial crises.

Akerlof and Shiller may explain some of the factors that have been affected in Sweden since financial crises started. They argued that the increases of the unemployment, is affected by the concepts; “money illusion” “confidence” and “fairness”. However, we cannot argue that corruption has been a problem in Sweden so far. The main point from their theory is that when confidence is low the economy will suffer more than a decrease in consumption and investment.

According to our empirical material especially stock market, it is possible to say that Swedish market is suffering by loss of confidence.

Akerlof  and Shiller argue that “new era” is one of the causes to the creation of a boom. We have empirical evidence that Sweden had both low inflation and low interest rate during 2005 until 2006 which started increasing slowly. We cannot fully argue that “new era” was the creation and explanation of the boom in Sweden.

It is apparent that psychology plays an important role in financial crises. We have measured the psychological aspect by examine the savings ratio in Sweden which have increased during the crisis. The increased savings ratio strengthens the belief that individuals tend to lower their investments and increase their savings in times of uncertainty. While working with this thesis, we have understood that the drivers for the present crisis have a scary resemblance with earlier crises. We therefore agree with most economists that in order to understand the present crisis we have to look back on previous crises.

# 6. CONCLUDING DISCUSSION

*In this section we will resume the discussion of our purpose of the study and present our main conclusion.*

**Purpose**

We are interested in explaining how the specific theories on financial crisis can explain the causes and effects of financial crises. Therefore, the aim of this study is to at first acquire and present the necessary knowledge regarding characteristics of financial crises from specific literary theories on the crises. In addition, we will use these literary theories to select economic indicators that will help to explain the repercussion on the Swedish economy as a result of the current financial crisis.

- *What characterises a financial crisis according to the literature chosen?*

According to the literature, a financial crisis begins through an external disruption in the macroeconomic system. This leads to increases in the bank's lending as the prices of the underlying securities and real estate are rising. An economic high boom strengthens by extending bank credits; financial institutions grant credits which would not be approved under normal market conditions. The prices of securities, after some time, start decreasing which lead to a reduction of the confidence in the financial market. Financial crises involve adverse selection and moral hazard that occurs when loans likely are made to bad credit risks. The consequence is that lenders may decide to refuse making new loans, even though there are good credit risks in the marketplace. Moral hazard occurs in the financial markets after a loan is extended, the lender is subjected to moral hazard when the borrowers engage in activities that are undesirable from the lenders point of view. Banks will, as a result of adverse selection and moral hazard, refuse to grant new loans which will make business houses sell their commodities, households sell their securities and industries postpone loans. A number of businesses will go bankrupt at the same time the financial market is in distress. This panic can remain and feed on itself until the price is so low that investors thinks it is a good time to buy again, or when the lenders of last resort bring back confidence to the market.

- *To what extent can these literary theories on financial crises explain the repercussion of current financial crisis on the Swedish economy?*

We conclude that certain parts of the theories presented give a better description and explanation combined, than one theory left alone. The reason for this might be explained by the fact that the theories were developed as a reaction on an earlier crisis, during a period with different economic conditions. However, we think that Mishkin's theory, Asymmetric information, can explain much of what happened in Sweden before, during and after the crisis. His five factors have shown to correspond well; however, it is hard to establish if it is due to an increase in adverse selection and moral hazards. The empirical materials confirm that at least three of Mishkin's factors caused the financial crisis: increases in interest rate, stock market decline and increased uncertainty. There is no evidence however that factors, such as a bank panic have taken place in Sweden in the sense that Mishkin explains. This also constitutes to Mishkin's fifth factor. Price level decline is not confirmed by our empirical material. Thus, Mishkin's three of five factors can explain the repercussion of the Swedish economy.

We conclude that Kindlebergers model gives a good foundation on the understanding of financial crisis but lack a source of precise fullness that can be applicable to a specific crisis. It is not an easy task to identify in what stage of Kindleberger model the economy is in, which make it hard to predict the transition to the next stage. His model supplies a general framework of understanding that facilities further analyzing in cooperation with other theories. Minsky's financial instability hypothesis can explain the Swedish increased inflation and the increase in Repo Rate in the end of 2008. Moreover, Akerlof's and Shiller's "confidence", "fairness", "money illusion" can explain the repercussion on the Swedish economy to some extent. For instance, our empirical material has confirmed that the stock market, unemployment and savings ratio has been affected by financial crisis. However, we have no evidence that corruption has been a part of financial crisis in Sweden.

## 6.1 Criteria's of truth

In the methodology we discussed validity, reliability and generalization. Since we are finished with our study, we will reflect on these concepts further. In order to make this study as valid as possible, we had to use both, theoretical models and previous studies, as a guide in deciding the economic indicators used in this thesis. By doing so, we believe that the internal validity of this study is fulfilled. The external validity has been met by controlling the data collection and information of our secondary analyses at least three times. (Bryman and Bell, 2007, p. 40-42) Therefore, the choice of indicators has been based on the theoretical models on financial crises and previous studies. By doing so, the internal validity of this study is fulfilled. To assure that the data collected is correct we have controlled it three times. We have also made sure that the data were collected from well know and trustworthy sources. The indicators and the methods of illustrating the data have been used by other studies on financial crises. Since we have carried out a quantitative study, we believe the results we found would not differ if a similar study would be implemented again, under the assumption that the same indicators have been used. We have no reason to believe that the data from the other sources mentioned previously would change; therefore, we believe that the reliability in this study is well implemented. (Bryman and Bell, 2007, p. 40-42)

The choice of secondary analysis and the choice of the data collection depended on our purpose and research question. We believe that our study can be generalized to a certain extent since our findings are similar to other studies on other financial crises. Previous studies on financial crises have used similar indicators and found similar development of the indicators. (Bryman and Bell, 2007, p. 169-173). Since we found that similar changes have been made in the US interest rate and money supply to those that have been seen in Swedish macro economy, we believe that our findings can be generalized. However, we are careful in pointing out that our findings cannot be generalized too much, since we have not found studies identical to ours.

## 6.2 Learning and improvement

Instead of ending this thesis with further studies, we choose bring to up some issues that we came across this study process. Since our knowledge about finical crises was limited, especially about financial theories, we had to spend too much time reading about other financial crises. Thus, while doing the literature review, we acquired knowledge about previous crises, which was a helpful tool for us to make this study possible. However, most of the other crises differ in one way or another, complicating the selection of the theory. Therefore, if we could have redone this study we would have searched for specific financial theories instead of spending time on old financial theories. Clearly, the financial system has been more complex nowadays, increases the problem with old theories even further.

Finally, there is no single theory that can fully explain financial crises. If one desires a more precise picture different theories and approaches must be tried in order to get a more objective, and thorough view. While financial crises cannot be fully predicted, there are many indicators which illustrate when the economy is heading for downturn and vice versa. It seems that due to the psychological aspects of investing, when people are making money many simply do not know when to quit.

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