Credit Rating Agencies:
An analysis on the influence of rating agencies on public policies

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Journalist Thomas Friedman (1996):

"There are two superpowers in the world today in my opinion. There's the United States and there's Moody's Bond Rating Service. The United States can destroy you by dropping bombs, and Moody's can destroy you by downgrading your bonds. And believe me, it's not clear sometimes who's more powerful."
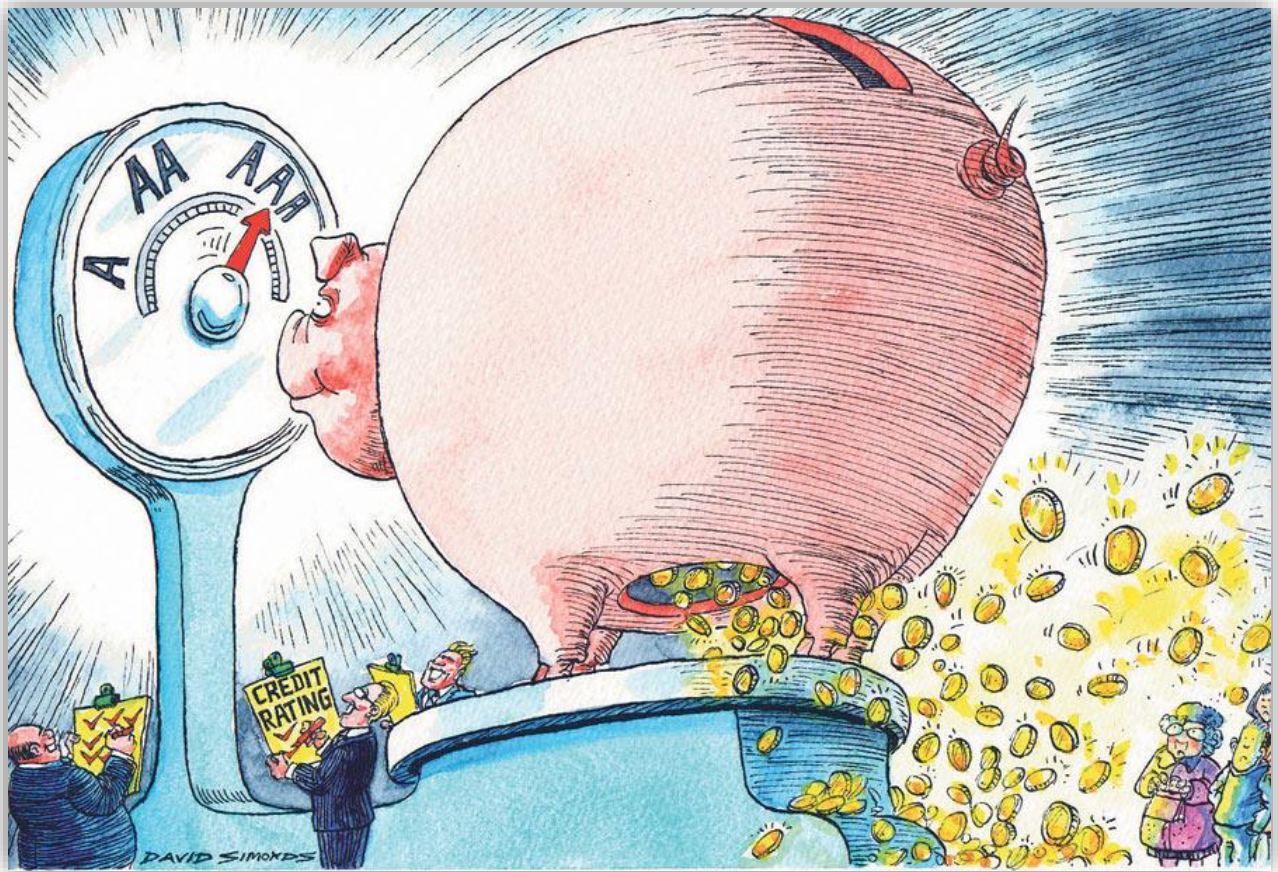
Master Thesis

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Management Summary

Credit rating agencies play a large role in the international financial and political system. They are seen as gatekeepers of large amount of credits and their sovereign ratings show the ability and willingness of a country to repay its debt. Many studies have been conducted to identify the most important indicators used by the CRAs to determine the sovereign ratings. However, little research has been done on the exact influence ratings, or downgrades of these ratings, have on public policies in countries. The main aim of this study is to contribute to the relatively small area of literature which is focused on the influence of rating agencies on public policies. For this research, the effect of downgrades is analyzed on changes in economic policies in countries. In order to investigate this influence, data on downgrades from the largest rating agency, Standard and Poor's, is used including data from the period 2004-2013.

The expectation was that, because of the power these agencies have as gatekeepers, rating agencies would press countries to adopt and implement policies according to the neo-liberal ideology in line with the mental framework of these Anglo-American companies. Therefore, it is expected that, following a downgrade, countries adopt more neo-liberal policies in order to more or less satisfy the agencies and get a higher rating again as a reward. The outcomes, however, do not prove a direct relationship between downgrades and changes in policies. However, a significant negative relationship is found that a downgrade results in a higher level of inflation the year after a downgrade. This indicates that countries have troubles to diminish the level of inflation by implementing policies to stabilize this rate. This is the opposite of what was expected.

Preface

This master thesis represents the final stage of the Master International Public Management and Public Policy. With the completion of this thesis, a very instructive and pleasant period at Erasmus University Rotterdam will come to an end. In this year, having a background in business, I learned a lot about the mechanisms and structures of international institutions such as the IMF, the EU and UN. I had a great time during the interesting study trips to Geneva, Brussels and Clingendael. And the wonderful group of students made that the year has passed very quickly. However, I could not have written this master thesis without the help of a number of people.

At first, I want to thank my supervisor and professor Ms. Geske Dijkstra for her support in this academic year. Her helpful comments during the process have been essential for the completion of this thesis.

Secondly, I would like to thank the second reader of this thesis Mr. van Paridon for being able to read my thesis on a short note and provide some useful insights.

Also, I would like to thank the members of my thesis cycle for their constructive criticism and comments during the process of the thesis. I perceived the meetings and collaboration within our group as very pleasant.

Last, but not least, I want to express my gratitude to my parents for their unconditional, moral, emotional and financial support throughout my studies. Without their support, I would not be able to experience the enrichment of my knowledge and life through these studies.

Joost van Damme

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Chapter 1: Introduction

1.1 Background

In the aftermath of the financial crisis, which broke out in 2007 in the United States and has since spread quickly across the globe, a lot of debate between academics, policymakers and bankers exist on the question who has been responsible for this global economic downturn. One of the many important issues among debate is the role of credit rating agencies (CRAs) before and during the crisis, and how they should act in the future. One definition of CRAs is given by Rom (2009) who argues that a "credit rating agency is a company that assesses (…) the issuers of debt obligations, and assigns 'credit ratings' to these issuers based on the likelihood that the debt will be repaid (Rom, 2009, p. 640)". Issuers, in this regard, could be countries, generally referred to as sovereign ratings, or companies. This basically means that CRAs provide opinions on the creditworthiness of entities and if these entities could meet their financial obligations (Frost, 2007). Thus, these ratings indicate the ability of a debtor to pay back its debt by making timely interest payments.

A widespread view among academics is that CRAs contributed substantially to the emergence of the financial crisis. White (2010) points out that ratings on the mortgages underlying the securities increased when house prices decreased in the late summer of 2006. These ratings proved to be excessively optimistic and caused a domestic and eventual global financial crisis. The existence of and need for CRAs can be described as that CRAs are intermediaries who solve the informational asymmetry between borrowers and lenders on the creditworthiness of borrowers (Elkhoury, 2009). The most well-known CRAs are American-based companies such as Moody's, Standard and Poor's and Fitch. During the last decades, these CRAs are covering an increasing number of countries, from 30 to almost 100 countries in the period between 1990-2006 (Soudis, 2015). The vast majority of the newly rated countries are developing countries. These developing countries aim for access to international economic flows at reasonable borrowing costs. However, in order to get such access, a high sovereign rating can be considered as an important achievement (Kiff et al., 2012). The importance of these ratings can also be exemplified by the fact that the ratings issued by CRAs, and in particular downgrades of these ratings, draw substantial attention in the media and often prompt comments from political leaders.

It is noteworthy to mention that CRAs are, on the one hand, private institutions seeking for profits and a maximization of shareholder value. On the other hand, CRAs provide a 'public good', because they have to provide essential information on the creditworthiness of companies and, more importantly, sovereign countries (Gavras, 2010). CRAs were more or less unregulated before the outbreak of the financial crisis. The President of the Federal Financial Supervisory Authority even claimed, in 2003, that "Credit Rating Agencies are the biggest uncontrolled power in the global financial system, and thus in the national financial system too" (Deutscher Bundestag, 2003, p.4).

In extant literature, the link between credit rating agencies and the possible influence they have on public policies has been an interesting topic for scholars. Several scholars (Sinclair, 1994a; Sinclair, 2005; Bruner & Abdelal, 2005) recognize the political aspects of CRAs. These scholars argue that economies, especially developing countries, which have been rated by a CRA are possibly forced to adopt and implement policies which ensure a favorable rating on the scale. Thus, policies will be implemented according to a prescribed set of neo-liberal rules by the concerned CRA. However, Harvey (2005) points out that CRAs are only one of the devices, among many, which focus on carrying out neo-liberal values. This relationship between policy-making and CRAs is investigated by Elkhoury (2009), who identifies that borrowing countries adopt policies in order to prevent a rating downgrade. Sinclair (2005) claims that CRAs put invisible pressure on countries, because CRAs know that they are able to influence the market of sovereign bonds and they can intervene 'softly' by informing countries regarding 'good' and 'bad' policies. In an early study, Cantor & Packer (1996) analyzed that a downgrade in the rating of a country negatively impacts a borrowing country's access to credit and increases its cost of borrowing, which in turn could lead to an implementation of different policies or reforms in the existing policies.

However, contrarily to the above mentioned studies, in another line of study several scholars actually identified the influence of implemented policies and political factors on CRA ratings by states, which is the exact opposite of what is argued above. Biglaiser and Staats (2012) claim that political factors are strongly related to the given ratings by CRAs.

Cantor & Packer (1996) were the first academics who tried to identify which political and economic factors determine the sovereign ratings from countries as the main CRAs are not keen on

transparency as the rating activities are their main source of income. Following this pioneering study, many academics tried to identify the determinants of sovereign ratings (i.e. Afonso et al, 2011; Hill et al., 2010; Bozic & Magazzino, 2013). For example, Afonso et al. (2011) show in their analysis that certain core variables have an impact on the short-term on a country's credit rating, such as GDP, per capita GDP, GDP growth rate, government debt and government deficit. However, determinants such as government effectiveness, foreign reserves and sovereign default dummies prove to have an impact on the long-run of a country's credit rating.

More recently, for the first time, Soudis (2015) empirically assessed the relationship between CRAs' ratings of bonds and policy reforms. Soudis (2015) used a dataset consisting of countries which received a downgrade in recent history. In this study, Soudis has put the emphasis on developing countries and whether they implement more neo-liberal policies as a result of obtaining lower ratings by the CRAs. The empirical results show no robust and generalizable evidence that ratings imposed by CRAs have a direct influence on domestic economic policies. The results also implicate that a downgrade in a country's rating is not a reason for large policy reforms in the country.

For the purpose of this study, it is interesting to zoom in and elaborate on Soudis' (2015) findings and conduct a quantitative analysis, on the basis of a different conceptualization of the main variables than Soudis. The idea is to test the influence of rating agencies, in which influence is conceptualized as a downgrade in a rating. on economic policies.

1.2 Aim of the thesis and problem statement

The main aim of this thesis is to contribute on the relatively small area of literature which is focused on the role of CRAs on changes in economic policies of countries. Several academics argue that CRAs will place invisible pressure on rated countries either by their ability to affect bond markets, or by pressing the rated countries to implement neoliberal ideals the rating agencies perceive as 'good' and 'bad' policies. In this study, the aim is to critically examine these claims. As far as known, Soudis (2015) is the only one who conducted a quantitative analysis on the topic. In this research, a different angle on the topic by identifying different variables for the operationalization

of changes in policy will provide a substantial contribution to the extant literature. Taking all above into account, the following research question is established:

What influence do credit rating agencies have on economic policies in countries?

In order to provide an adequate answer to this research question, several sub-questions are established, highlighting different vital aspects of the research:

1. *What are the main theories and what is the existing evidence on the influence of CRAs on economic policies?*
2. *How can the different variables in the research be conceptualized and how can the impact of these variables be measured?*
3. *What are the empirical findings of the regression analysis?*

1.3 Research Approach

The research is set up in such a way that at the end of chapter two, when the extant literature is evaluated and the main theories are highlighted, a main hypothesis will be developed. This hypothesis will test the relationship between the rating agencies and the possible effects on economic policies in those rated countries. The study can therefore be seen as an X-oriented research, in which the independent variable X (downgrades in ratings) has a possible influence on the dependent variable Y (changes in economic policies).

The research design of the study is a cross-sectional design with a large N, which indicates that the sample includes a minimum of cases around 100. Also, a cross-sectional design has been chosen, because the dependent and independent variables are measured at one point in time, it can be considered as a snapshot.

Soudis (2015) studied the effect of ratings on domestic policies by analyzing the differences between the initial value of four policy indicators when the CRA started to rate the concerned country and its value at the end of the dataset, which is 2006 in this regard, combined with the number of downgrades of the assessed country in this period. The indices Soudis (2015) used are: regulation, inflation and legal protection; government consumption is used as a proxy for the size of the government in that country. These variables are selected according to two criteria. Firstly, the variables are relevant to the rating assessment, following previous research on the determinants

of the ratings. Each of these indices are based on indicators from which the values are derived from several databases and are operationalized.

In line with the research from Soudis (2015), the aim of this thesis is to analyze downgrades in the sovereign ratings for countries on certain variables that can be considered as indicators for changes in economic policies. The concerned data regarding the historical ratings of the CRA for each assessed country are provided directly by the largest agency, Standard and Poor's. The time period in which the countries are rated varies from the late 40s, when Moody's rated the United States for the first time, until 2013. The idea is to identify suitable measures for the operationalization of the variables in this research such as changes in policies, downgrades and other relevant aspects. For this operationalization, information from the literature on the determinants of ratings will be used.

1.4 Theoretical and Societal Relevance

Research is theoretically relevant if it "contributes to the specific scientific discourse and to the advancement of the knowledge produced by it" (Lehnert et al., 2007, p.25). To make it more specific on this research, this indicates that the aim of this research is to contribute to the extant literature on CRAs and their possible influence on reforms in public policy. By providing a strong and well-established overview of the contemporary literature on this topic and making linkages with respected theories, this research can contribute to a wider understanding of the role CRAs have in the international political and financial field. To be more specific, this study provides a detailed assessment of the activities of the several CRAs and their influence on economic policies in the issued countries.

The societal relevance of research can be seen as the further understanding of social and political phenomena which possibly affects people and is able to make a difference (Lehnert et al., 2007). In other words, the societal relevance of a study can be seen as the impact a research can have on a day-to-day basis in specific aspects of society, depending on the topic of the research. Regarding the role of CRAs in the current financial system, there is a tendency towards more transparency and openness since the outbreak of the worldwide financial crisis in 2008. However, total transparency on rating activities is not in the interest of the CRAs as these activities are a major source of revenues for the companies. Nevertheless, this research can contribute towards a better understanding of the influence CRAs have in the international financial, economic and political field and the possible implications these activities have on public policy throughout the world.

1.5 Outline of the thesis

In this section, a detailed overview of the structure of this thesis will be specified, in which above described chapter one can be considered as an introductory chapter of this study. In the second chapter, a detailed literature review will be provided including the most accurate views by scholars on the relationship between CRAs and economic policies. Moreover, in this chapter, some of the most influential theories on the topic will be covered and explained extensively. Finally, a synthesis will be provided about the theoretical expectations along with a hypothesis in order to provide a firm basis to conduct the research.

In the third chapter, the exact research design of the study will be identified. Some explanation will be provided on the statistical techniques and the regression assumptions which will be used and tested in this research. Moreover, the different variables including the dependent variables, independent variable and control variables will be operationalized and explained. In this chapter the sampling strategy and the data which is used will be explained in detail. Finally, the regression model will be presented.

In the fourth chapter, the results of the conducted statistical analysis will be presented and discussed. The analysis will start with the frequencies and descriptive statistics. Thereafter, the multivariate regression assumptions will be checked. Then, the results of the regression will be discussed in order to test the hypotheses of the study. When the results are discussed, the link between the results on the one hand and the theories and literature on the other hand will be made in chapter five. This in order to provide an answer to the hypotheses and eventually to the central research question. Finally, conclusions will be drawn along with the main limitations which occurred during conducting this research. Also, recommendations for future research will be provided.

Chapter 2: Literature Review

In this chapter, a detailed literature review will be provided including the most accurate views by scholars on the relationship between CRAs and domestic policies. In order to have a clear comprehension of the topic, some background information on the history of CRAs will be provided along with an explanation of the role CRAs in the international financial system. Then the focus will be put on the rating activities of CRAs. What are the criteria and determinants for rating agencies in order to assess sovereign ratings? Several studies on the determinants of rating agencies by leading academics will be analyzed in order to identify the influence of several factors on ratings.

Furthermore, when the determinants of ratings are analyzed, the influence CRAs possibly have, according to the extant literature, on public polices and policymakers will be discussed. Moreover, in order to select appropriate variables for the research model, an analysis will be provided on which public policies could be affected the most by downgrades in ratings by CRAs. Although there is little empirical research on the influence of CRAs on changes in policies, possible control variables which have an effect on this relationship between downgrades and policy changes are explained. Finally, when the most important aspects on CRAs regarding this thesis are discussed, a hypothesis is established and a model with the main concepts of this thesis will be developed.

2.1 Introduction to Credit Rating Agencies

John Moody is commonly referred to as the person who initiated agency bond ratings in 1909. These early publicly available bond ratings were focused entirely on the U.S. railroad bonds (White, 2010). Exactly three centuries earlier, in 1609, the Dutch invented the common stock, which was the Dutch East India Company, and founded a central bank, the Wisselbank (Sylla, 2002). This occurrence marked a revolution in domestic and international financial markets. In a short period of time, the Dutch had a lot of the elements the current financial system also characterizes: a central bank, public credit, a stable coin and a security market. These inventions contributed to the emergence of the Dutch Republic as the strongest economic power worldwide in the seventeenth century (Sylla, 2002). In the next centuries, both the British and the Americans more or less adopted the Dutch approach and developed it further. This indicates that the trade of

common stock rose and became widely accepted in these countries. However, at the turn of the twentieth century, investors and financial regulators from banks increasingly demanded for more disclosure on operational and financial information from corporations (Sylla, 2002), which actually undermined the monopoly of investment bankers to assess the quality of securities, which eventually could lead to a decline in revenues for those banks.

In 1909, John Moody filled this gap by publishing a book analyzing the security values of the U.S. railroads, instead of just collecting information on the capitalization, property and management of companies (Moody's, 2016). It was the idea of Moody's to merge the complex data within the analyses into a rating symbol for each security (Darbellay, 2013). These well-known symbols (A, AA, AAA, B, BB, C, etc. with possible minuses and plusses) for the ratings are still used today. The analysis of the stocks and bonds of the US railroads by John Moody and the spread of this information to the public marked a change in direction of Moody's company. Moody's became the first well-known rating agency, analyzing the qualities of public market securities (White, 2010). Following Moody's early success, several new rating agencies entered the market. The most well-known are Standard & Poor's (S&P), which published its first rating in 1923 after a merger of Poor's Publishing Company and the Standard Statistics Company and Fitch, established as The Fitch Publishing Company and rating bonds since 1924 (White, 2010).

2.1.1 The Early Years of Credit Rating Agencies (1909-1960s)

Essentially, the above mentioned CRAs sold their bond ratings to investors in large and thick rating manuals, under the principles of the 'investor pays' (White, 2009). However, the relationship between the CRAs and the U.S. bond markets changed dramatically in 1936. This change was caused by the economic recession in the late 1920s and early 1930s, well-known as the Great Depression. In order to avoid such recessions in the future, some regulatory modifications were deemed necessary. Before the regulatory changes, the widespread view on CRAs was that they were classic intermediaries in the financial markets (Partnoy, 2009). CRAs avoided negligent behavior, because this would cause reputational and thus financial damage. However, changes in regulations were implemented by the Office of the Comptroller of the Currency, in other terms the bank regulator, who encouraged banks to invest only in safe bonds (White, 2010). This Office implemented some new regulations which prohibited banks from investing in so-called "speculative investment securities (USCC, 1936)" determined by "recognized rating manuals

(USCC, 1936)" as Moody's, Standard & Poor's and Fitch. These speculative securities were bonds that were below the "investment grade (USCC, 1936)" and implied that banks were forced to invest only in highly rated bonds (Sally, 2002). This occurrence had the effect that the regulators had endowed safety judgments from a third-party, which are the major CRAs in this case, in the existing laws. Consequently, while taking into account the ratings performed by the CRAs, a large amount of more than one thousand of the around two thousand publicly traded bonds did not pass the Comptroller's new regulations and could no longer be possessed by banks (Partnoy, 2009).

In order to understand the reasoning behind the implementation of such regulations by the federal bank regulators, one most look at the central function of bank regulation which is the attempt to keep the banks solvent and viable at all times, also expressed as 'safety and soundness' (White, 2013). This explains why regulators encourage banks to invest in safe bonds, rather than in speculative ones. The Office of the Comptroller of the Currency, in this regard, believed that the published ratings from the major CRAs can be considered reliable, which allows the Office to more or less outsource the decision which bonds are safe and which are not (White, 2013). This regulatory change can be seen as a turning point in the role the CRAs partake in the financial markets. Prior to these changes, the use of the rating activities by the CRAs was on a voluntary basis: investors could basically do with the ratings what they wanted (White, 2013).

After the changes, the CRAs had a fixed and guaranteed audience for their rating activities. Moreover, also parties beyond the banks which were interested in the bond markets wanted to know the levels of the ratings by the CRAs (White, 2013). As a consequence, the CRAs had a much broader audience than just the commercial banks and, more importantly for the CRAs, what actually mattered was the ratings published by the CRAs (Partnoy, 2009). This indicates an enormous boost in the actual power these CRAs possess in the financial markets of that time, particularly in the US. This had positive implications for the CRAs who became more profitable and more important, because they were selling more and more regulatory licenses (Partnoy, 2009). In order to explain the latter part, one must think of the necessity of a rating higher than BBB for investors and banks to invest in a bond. Therefore, CRAs more or less 'controlled' the bond markets, indicating that the ratings by the CRAs actually determined which bonds were allowed to sell to banks and investors. This means that these banks and investors were heavily dependent on the rating activities from the CRAs.

During the following decades, the state regulators of the insurance market in the United States followed a similar path and began to incorporate the ratings from the same major CRAs into their regulations (White, 2010). This implicated a broader audience for the CRAs, which was even further widened in the early 1970s when the federal regulators of the pension funds implemented the same sort of regulations for the pension plans, which implied the dependency of large markets to the sole judgement of several, rapidly growing, credit rating agencies. Until the mid-1970s, the investor paid for the assessed ratings.

2.1.2 The Globalization of Credit Rating Agencies (1970s-now)

In 1975, another major development occurred regarding the widespread use of the rating activities by CRAs. The Securities and Exchange Commission (SEC) issued new regulations in order to "make capital requirements sensitive to the riskiness of broker-deals' bond portfolios" (White, 2009). In order to assess this riskiness, the SEC decided to use the ratings on those bonds published by the major CRAs. Consequently, the SEC created a new category, the Nationally Recognized Statistical Rating Organization (NRSRO). The three major CRAs, Moody's, S&P and Fitch, immediately received the status of such NRSRO. The SEC used the ratings of the NRSROs for the determination of the capital requirements in broker-deals (White, 2013). Over the next 25 years, only four CRAs were certified as NRSRO, indicating the large entry barriers for potential firms interested in providing information about the creditworthiness of bonds and securities. Mergers among the entrants and Fitch, marked the eventual establishment of the three major CRAs as we know them today (Sally, 2002). However, since the early 1970s, there were other significant changes within CRAs and the international financial markets in general that caused changes in the position of CRAs in these markets.

Changing Business Model

Another change that occurred in the early 1970s is the business model of the CRAs. They made a transformation from an 'investor pays' principle to an 'issuer pays' principle. In this change of model, not the investor, but the legal entity that is issuing the bonds pays the CRA to rate the bonds (White, 2010), indicating that companies and countries pay for the execution of the rating activities by the CRAs. The reason behind this exact timing behind this transformation remains rather unclear. However, according to Reurink (2012) the transformation of the CRAs business model is a result of changes in the American, and later global, financial system. This process change is

commonly referred to as *financialization*, which indicates a process in which the financial sector became an increasing percentage of the economy, and in which capital expanded its influence over the political economy (Deeg & O'Sullivan, 2009). This also implies that, since the early 1970s, individual investors start to give authorizations to institutional investors about the management of their portfolios. As a result, companies felt the pressure that they should be rated in order to sell their bonds to this upcoming group of institutional investors and investment banks (Reurink, 2012).

This event actually causes a potential conflict of interest, because a CRA can keep the issuer happy by providing positive ratings so that the issuer would not go to a rival CRA (White, 2009). All in all, regulators' actions contributed heavily to the dominance of the three major rating agencies. The SEC never published criteria for a NRSRO certification nor they provided any explanation or justification why some firms received the certificate and others not (White, 2010). An interesting quote regarding the CRAs reputation is the following: "There are two superpowers in the world today in my opinion. There's the United States, and there's Moody's Bond Rating Service. The United States can destroy you by dropping bombs, and Moody's can destroy you by downgrading your bonds. And believe me, it's not clear sometimes who's more powerful." (Friedman, 1996), clearly indicating the potential power CRAs possess.

Disintermediation

The traditional role of bankers as lenders changed during the twentieth century when borrowers were able to bypass banks in their search for inexpensive credit. In turn, borrowers could access the global market directly (Reurink, 2012). This turn of events in the mid-1970s and early 1980s can be seen as the disintermediation of the financial market. Before this change, banks acted as financial intermediaries in the markets by bringing together the suppliers and the users of credit (Sinclair, 1994a). Basically, banks borrow money from the suppliers who deposit their money. In turn, banks lend this money to borrowers at their own risk. The banks serve as an intermediary, because the suppliers who deposit their money and the borrowers from that money do not have a contractual relationship with each other, but with the bank (Bannock & Manser, 1989). Banks cover the intermediation costs by charging a higher amount to the borrowers of the available funds than they pay to the lenders of funds. However, this structure is threatened as borrowers are increasingly able to gain direct access to capital flows from the market and do not need intervention from an intermediary (Sinclair, 2005). For instance, companies could withdraw their money from the bank

and lend directly to borrowers, or when corporations issue bonds that only needs to be underwritten by a bank (Bannock & Manser, 1989). Moreover, depositors discovered more attractive things to do with their money than storing it in bank accounts and borrowers started to raise funds in other, cheaper capital markets than to borrow from banks (Reurink, 2012).

According to Reurink (2012), lending by banks provided for 65 percent of the needs in 1970. This percentage dropped to 36 in 1992. On the other side of the balance, Sinclair (2005) points out that in the period 1980-1990 the total assets of American households in bank deposits dropped from 46 to 38 percent. It can be argued that disintermediation had a dramatic effect on all the actors active in the financial market.

This disintermediation of the financial system created problems of information asymmetry. In a financial market with an intermediate such as a bank, there is relatively low risk to the supplier of the funds as banks are regulated and need to maintain a certain liquidity (Sinclair, 1994a). In an environment without interference from a third party, the supplier of money has to make judgment calls on the likelihood that the debt will be repaid (Sinclair, 1994a). Credit rating agencies provide these judgment calls, without being responsible for the outcome. There is no such thing as a contract between the borrower, lender and the CRA who rates the ability of the borrower to repay its debts (Elkhoury, 2009). The activities of the CRAs can be characterized as 'signposts' which direct the flow of international capital flows (Kerwer, 2002).

Securitization

Following the process of disintermediation, banks experienced a decline of earnings coming from their traditional operations as financial intermediary or institution where one could borrow credit or deposit its cash (Blackburn, 2008). Since the early 1980s, "banks found new business by converting consumer debt intro tradeable securities and then selling those securities to the funds (or other banks)" (Blackburn, 2008, p. 67). This process is commonly referred to as *securitization*. Various types of contractual debt are pooled and sold in packages to institutional investors. In practice it means that investment banks make combinations of high yield and low yield bonds into a financial product that would receive an acceptable rating from CRAs (Reurink, 2012). As already indicated, in early regulation on bonds and securities, a positive rating from the CRAs was deemed necessary in order to be able to invest. Because of the positive investment rating of these products, institutional investors were allowed to invest in these interesting newly established financial

products (Blackburn, 2008). As a consequence, the junk bond market reopened its doors and many complex financial products were traded on the market. This complexity caused another incentive for investors to rely on the judgments of CRAs whether or not to invest in certain products (Blackburn, 2008).

Financial Globalization

The early 1970s is also considered as the beginning of a period which is characterized by increased financial mobility and integration of currencies and bonds across borders all over the world (Cleaver, 2007). This process is commonly referred to as *financial globalization*. Sinclair (2005) describes financial globalization as a "worldwide change in how financial markets are organized, increases in financial transactions volume, and alterations in government regulation" (Sinclair, 2005, p.2). This indicates that financial flows were integrated worldwide, and the transformation of market structures in order to implement these integrations.

Just as in the early 1910s, the expansion of the agencies in the 1970s started slowly and then started to accelerate. "In 1975, 600 new bonds were rated, increasing the number of outstanding rated corporate bonds to 5,500. Today, Moody's rates 20,000 public and private issuers in the U.S., and about 1,200 non-U.S. issuers, both corporations and sovereign states; S&P rates slightly fewer in each category. Moody's rates $5 trillion worth of securities; S&P rates $2 trillion. Moody's and S&P thus dominate the world's business of rating governments and corporate debt" (Partnoy, 1999, p. 651). Moreover, in the mid-1980s, the CRAs covered only U.S. corporations and the debt of around fifteen sovereign states. The worldwide industrialization, especially in the Global South, and the increase of developing and emerging countries attempting to get access to capital in the financial markets accelerated the process. In 1995, both Moody's and S&P rated 52 countries of which the half were in the so-called emerging markets category (Partnoy, 1999). According to Bruner and Abdelal (2005), "no sovereign government would dare to issue debt without being rated by one or both of the agencies. In fact, many sovereign governments have, without any intention of issuing debt, sought a rating as a signal for transparency and orthodoxy to the market and other governments" (Bruner & Abdelal, 2005, p. 192). This quote clearly indicates why governments pay the CRAs in order to receive a rating, because the rating is considered as a sign of transparency and goodwill to other parties in the financial market. In addition, the governments felt pressure to

be rated even if they did not issue bonds, because CRAs were not allowed to rate corporations before a sovereign rating was established (Reurink, 2012).

This new role of CRAs, from rating only a handful corporations and governments, to more than one hundred countries and numerous corporations, raises questions about the indicators and methods used in order to produce the three character symbols the ratings are. However, the methodological frameworks of the CRAs lag behind that of other developments in the financial market (Abdelal, 2007). As of the late 1980s, the established framework of rating sovereigns became updated. An important note in this regard is that this new framework is largely dictated by the developments in the financial markets and the international political economy. As a result, the new methodological framework became a reflection of the American imperatives established in the financial globalization (Reurink, 2012). This means that values as transparency and liberalization became important indicators, especially for developing countries. Countries which show commitment to a more open market and liberalization of capital flows could gain competitive advantages in receiving positive ratings by the American CRAs, and thus easier access to the financial markets. (Abdelal, 2007).

2.2 The Determinants of Sovereign Credit Ratings

In sub-chapter 2.1, an introduction is provided on credit rating agencies and the role CRAs played in the international financial system since the establishment of Moody's as the first rating agency. Also the changes the CRAs experienced throughout the years in terms of regulations and growth has been discussed.

Sovereign ratings can be considered as an assessment on the willingness and ability of sovereigns to repay its public debt in time (Afonso et al. 2011). There are three main reasons why these sovereign ratings are important for investors, governments or financial institutions. At first, sovereign ratings are the number one determinant for the amount of interest a country has to pay in the international financial markets. These rates can be seen as the borrowing costs for which a country is able to borrow money (Cantor & Packer, 1996). Secondly, the rating of a sovereign can be a proxy for the ratings of domestic companies or financial institutions in that particular country (Afonso et al., 2011). Finally, ratings can also be beneficial or detrimental for countries as they are the visible drivers for the attraction of foreign investment (Bozic & Magazzino, 2013).

However, there is still a lot of uncertainty regarding the rating processes of corporates, bonds and, in particular for this research, sovereigns. The case with the three main CRAs is that they are not very transparent on the factors and determinants which comprise a sovereign rating. Therefore, numerous studies have been undertaken since the pioneering research from Cantor and Packer (1996) in order to find out which (economic) indicators are important, and in which measure, for the assessment of sovereign rating. Most researchers acknowledge that, next to quantitative components based on fundamental economic analysis of the rated entity, also a more unclear qualitative component is important when providing the rating (e.g. Mellios & Paget-Blanc, 2006; Bozic & Maggazino, 2013). The idea of this sub-chapter is to get a clear overview which economic and/or political indicators are important for CRAs in their assessment of sovereign ratings. At first, the indicators for the assessment of ratings which are mentioned by the three CRAs themselves will be discussed. Secondly, the most important studies on the determinants of sovereign ratings are analyzed. Finally, a conclusion is made on the basis of the extant literature.

As mentioned earlier in this study, the main CRAs lack some transparency on which indicators they used when assessing sovereign ratings, although this transparency has been improved since the most recent worldwide financial crisis (Bozic & Maggazino, 2013). This occurrence could be explained by the fact that total openness would leave the agencies without a business model as every party would be able to establish a rating for an entity. The three major CRAs do provide the public to some extent with information on indicators they perceive as important. This improves the transparency of the CRAs, but it is valuable to note that this information is not a representation of the total assessment of a country's credit rating. It is merely a guideline to the techniques and methodologies used by CRAs. In this sub-chapter, the information provided by Fitch, Moody's and Standard & Poor's will be analyzed and explained.

2.2.1 Fitch

In order to assess a final sovereign rating, Fitch employs a Sovereign Rating Model (SRM) with 18 key variables which are operationalized within the model. Also, Fitch provides a Qualitative Overlay (QO) of this model as they recognize that only quantitative variables are not able to capture all influences on creditworthiness (Fitch, 2016). The SRM can be seen as the starting point of assigning ratings to sovereigns. In this model, 18 variables are collected from several sources as the IMF, the World Bank and the sovereign issuer itself. The Qualitative Overlay is designed to

control for factors that are not fully reflected in the quantitative variables in the SRM. It is generally a subjective assessment of qualitative elements that Fitch perceive as important (Fitch, 2016). The overall sovereign ratings criteria are based on four pillars which thus represent both quantifiable variables and qualitative elements of the issuer. Fitch provides information of the weight of the different quantifiable elements in the SRM. However, Fitch does not provide any information of the weight of the qualitative elements within the total assessment of the ratings.

1. Structural Features: This pillar reflects four criteria for assessing ratings. In total, the criteria in this pillar is weighted in the SRM for 53.6 percent (Fitch, 2016).

> - **Quality of governance:** government effectiveness, rule of law, voice and accountability, control of corruption and business environment
> - **Wealth and flexibility of the economy:** GDP per capita, Resilience to shocks, depth of financial system and savings rate and openness
> - **Political risk:** Political stability, legitimacy of regime, conflict/war risk, debt payment record and risk to economic policy
> - **Banking sector:** Quality of regulatory and supervisory systems, macro-financial instability risk, contingent liability risk, Banking Sector Index (BSI) and Macro-Prudential Indicators (MPI)

2. Macroeconomic performance, policies and prospects: This pillar reflects the macroeconomic stability and a credible policy framework, which could have a positive influence on sovereign creditworthiness and thus sovereign ratings. The weight of this pillar in the SRM is 11.8 percent (Fitch, 2016).

> - **Policy Framework:** coherence and credibility, robustness and resilience to shocks
> - **GDP Growth:** level, volatility and sustainability
> - **Inflation:** Level and stability, dollarization/indexation
> - **Real Effective Exchange Rate:** Consistency with policy framework, vulnerability of fixed regimes.

*3. Public Finances***:** The third pillar reflects the structure, level and projections of public debt combined with the consistency of a fiscal policy. This pillar is weighted in the SRM for 16.7 percent (Fitch, 2016).

- ➤ **Government Debt:** Gross general government debt as a percentage of GDP, debt tolerance, fiscal assets, maturity and interest rate and currency mix, financial flexibility and market access and contingent liabilities.
- ➤ **Fiscal Balance:** General government balance as a percentage of GDP, budgetary flexibility and breadth of revenue base.
- ➤ **Debt Dynamics:** Sustainability of public debt, scenario analysis based on forecasts for primary balance.
- ➤ **Fiscal Policy:** Consistency, transparency and prudence of fiscal rules and framework.

4. External Finances: The fourth and last pillar of the model represents the capacity of the economy to generate foreign exchange and the composition of foreign assets and liabilities. This pillar weights 17.9 percent of the SRM (Fitch, 2016).

- ➤ **Balance of Payments:** Current account balance, commodity or sector dependence, structure and volatility of capital flows, external debt service.
- ➤ **External Balance Sheet:** Sustainability of external debt, stock of external assets and liabilities, net foreign asset position, official sector vs market debt and currency structure.
- ➤ **External Liquidity:** International liquidity ratio, reserve currency flexibility and willingness of non-residents to extend credit and purchase domestic assets.

2.2.2 Moody's

The eldest of the three main rating agencies, Moody's, also provides a document in which it explains its rating methodology on the assessment of sovereign ratings. According to Moody's (2015), the sovereign rating is based on the interplay of four key factors which are economic strength, institutional strength, fiscal strength and susceptibility to event risk. In line with Fitch' approach, Moody's also incorporates qualitative variables along with some adjustment factors which are taken into account for the assessment of ratings for each of the four key variables (Moody's, 2015). A division of the weight of each of the key areas in the total outcome is not provided.

1. Economic Strength: This factor represents the intrinsic strength of a sovereign's economy as this important for the determination of a country's resilience or shock-absorption capacity (Moody's, 2015).

- **Growth Dynamics (50%):** Average real GDP growth, volatility in Real GDP growth, World Economic Forum (WEF) Global Competitiveness Index.
- **Scale of the Economy (25%):** Nominal GDP in US$
- **National Income (25%):** GDP Per capita in US$

  Adjustment Factors:
  - Credit boom, to evaluate if excessive credit growth has a significant influence on the key economic indicators
  - Economic diversification to control for a reliance of a country on a single industry.

2. Institutional Strength: The Institutional Strength factor represents the added value of institutions to improve the willingness and ability to repay a country's debt (Moody's, 2015).

- **Institutional Framework and Effectiveness (75%):** Worldwide Government Effectiveness Index, Worldwide Rule of Law Index, Worldwide Control of Corruption Index. All these indicators are derived from the Worldwide Governance Indicators database from the World Bank.
- **Policy Credibility and Effectiveness (25%):** Inflation level and Inflation volatility

  Adjustment Factor:
  - Track record of defaults, which represents the expectations of Moody's around the risk of a re-default, the time since the last default and the amount of losses incorporated by investors.

3. Fiscal Strength: This factor captures the overall health of the government finances (Moody's, 2015).

- **Debt Burden:** General government debt as a percentage of GDP, general government debt as a percentage of government revenues.
- **Debt Affordability:** General government interest payments as a percentage of revenues, general government interest payments as a percentage of GDP.

  Adjustment Factors:
  - Debt trend represents the change of the debt as a percentage of GDP over a period of time.

- Foreign currency government debt as a percentage of general government debt.
- Other public sector debt as a percentage as GDP.
- Public sector financial assets or sovereign wealth funds as percentage of general government debt. This recognizes the debt reduction potential of fiscal transactions.

4. Susceptibility to Event Risk: this factor is aimed at a government's ability to resist shocks and the resistance against extreme shocks which are able to negatively impact public finances and thus increases the probability of a sovereign default (Moody's, 2015).

➤ **Political Risk:** Domestic political risk, geopolitical risk
➤ **Government Liquidity Risk:** Fundamental metrics, market funding stress
➤ **Banking Sector Risk:** Strength of banking system, size of banking system, funding vulnerabilities
➤ **External Vulnerability Risk:** Current account balance plus Foreign Direct Investment as a percentage of GDP, external vulnerability indicator, net international investment position as a percentage of GDP.

2.2.3 Standard & Poor's

The last rating agency for which the rating criteria will be explained is Standard & Poor's. In line with the other two rating agencies, Standard & Poor's analysis of the key factors for assessing sovereign ratings consists of both quantitative as qualitative elements along with potential adjustment factors which could influence the outcome of the assessment. Standard & Poor's has determined five key areas in order to determine the sovereign's creditworthiness (Standard & Poor's, 2014). The weighting of each of these factors in the total outcome is not provided.

1. Institutional Assessment: This area consists of an analysis on how governments institutions and policymaking structures are able to affect a sovereign's financial balance (Standard & Poor's, 2014).

➤ **Primary Factor:** the effectiveness, stability and predictability of the sovereign's policymaking and political institutions.
➤ **Secondary Factor:** the accountability and transparency of institutions, data and processes.

Adjustment Factors:

- A sovereign's debt payment culture. This represents the willingness of sovereigns to pay back its debt to creditors.
- External security risks. This relates to geopolitical or other external risks such as war or threats to a sovereign.

2. Economic Assessment: This area consists of the economic strength and prospects of sovereigns. Standard & Poor's (2014) argues that wealthy, diversified nations with sustainable economic growth are better able to allocate resources, thus produce higher levels of wealth and are less susceptible for a default.

The main measure for this economic assessment is based on a country's income level, measured by the GDP per capita. This initial outcome can be adjusted by two factors. These factors are economic growth prospects, captured by the GDP per capita trend growth, and economic diversity which outlines the reliability of a sovereign on a single industry or sector (Standard & Poor's, 2014).

3. External Assessment: The external assessment comprises a country's ability to obtain funds from abroad to meet private- and public sector obligations to nonresidents (Standard & Poor's, 2014).

- **Status of sovereign's currency in international transaction:** the international use of a sovereign's currency is retrieved from the (i) the strength of its financial system, (ii) the credibility of a country's policies and institutions and (iii) the use of a sovereign's currency in global capital markets (Standard & Poor's, 2014)
- **External Liquidity:** the ratio of the gross external needs, which is the current account payments plus short-term external debt as a percentage of the current account receipts.
- **External Indebtedness:** the ratio of net external debt as a percentage of the current account receipts.

4. Fiscal Assessment: This key factor identifies the sustainability of a sovereign's debt burden and deficits. It includes fiscal flexibility and debt structure (Standard & Poor's, 2014).

- **Fiscal Performance:** this variable is measured by the change in general government debt during the year as a percentage of GDP in a particular year.

- ➢ **Fiscal Flexibility and Trends:** the amount of liquid financial assets a government has available in order to lessen the effect of economic cycles on its fiscal performance.
- ➢ **Debt Level and Cost of Debt:** Debt burden, which is the government debt as a percentage of GDP. Debt affordability is the general government interest payments as a percentage of government revenues.

5. Monetary Assessment: The final key area captures the ability of a monetary authority in a sovereign to support sustainable economic growth (Standard & Poor's, 2014). This area contains the following elements:

- ➢ Coordination of monetary policy with fiscal and other economic policies.
- ➢ The credibility of a monetary policy measured by inflation trends.
- ➢ Monetary mechanisms' impact on the sovereign's economy. This is about the diversification of a sovereign's financial system.

Conclusion

When taking the main criteria for the assessment of sovereign ratings by the three main rating agencies, Fitch, Moody's and Standard & Poor's, into consideration, several conclusions could be drawn. At first, all three rating agencies include a wide range of variables into their models in order to assess sovereign ratings. These variables can be of qualitative and quantitative nature and compose of a broad range of areas within the economic spectrum. Examples of areas which are important for CRAs for the assessment are a sovereign's monetary policy, fiscal policy, levels of development mainly measured by the growth in GDP per capita and the strength of governmental institutions. Also the historical records of debt repayments and a possible default are important indicators which are taken into account by the CRAs.

As already mentioned in the introduction, it is important to notify that the structures and methodologies published by the CRAs should be seen as a guideline for the ratings assessment and not as the one and only procedure to follow. This is confirmed by the CRAs, because each country is different in its nature and thus deviations in the assessment criteria are allowed (Moody's, 2015; Standard & Poor's, 2014). The CRAs provide these guidelines in order to improve the transparency of their rating activities. However, they do not provide the mutual weight of the different variables when determining a final rating. Moreover, Fitch (2016) acknowledges the existence of a subjective

observation which is mainly captured in the qualitative elements. This seems logical since qualitative variables as political risk, fiscal rigidity, budget flexibility and vulnerability to external shocks can be operationalized, but are always subject to opinions and assumptions. All in all, taking these observations into account, it can be said that the sovereign rating assessment is a complex activity which includes objective and quantifiable criteria as well as subjective qualitative elements.

2.2.4 Empirical research on the determinants of sovereign ratings

In the previous sub-chapter, the rating criteria provided by the three main CRAs were analyzed. However, the CRAs acknowledge that there is a subjective element to the rating assessment and they do not provide the weighting of the different variables in their rating activities. Therefore, because of these uncertainties, the identification of the determinants of the sovereign rating assessment has been subject to numerous researches. Many researchers tried to find out which (economic) variables have an impact on sovereign ratings and in which measure. This has been an interesting topic for academics since, Ratings are a reflection of a country's ability and willingness to repay its debt and its debt interest. Also ratings are considered as the main vehicle for countries to attract foreign direct investment (i.e. Cantor & Packer, 1996; Bissoondoyal-Bheenick, 2004; Bozic & Maggazino, 2013). For the purpose of this research, the most relevant studies will be analyzed.

A pioneering study in the field of identification of the determinants of sovereign ratings, has been the one from **Cantor & Packer (1996).** These academics examined the determinants and the influence of sovereign ratings assigned by Standard & Poor's and Moody's. They based their ratings on the statements provided by Standard & Poor's and Moody's regarding the criteria on sovereign ratings as they list numerous political, economic and social factors as influential. However, identification of a possible relationship between the criteria and the actual ratings is difficult as the relative weight of each variable is unknown and some criteria are qualitative of nature. For their research, Cantor & Packer (1996) identified eight variables which are repeatedly mentioned by the CRAs in their statements.

The data comprises ratings from 49 countries which are assessed by both rating agencies. Their analysis showed that six of those variables (per capita income, GDP growth, external debt, inflation, degree of economic development and default history) are significantly correlated with a

country's rating. Moreover, the analysis confirmed that macro-economic indicators are crucial for the determination of sovereign ratings. However, they acknowledge and found evidence that there is a qualitative aspect in the determination of sovereign ratings. They argued that rating agencies' opinions have an independent effect on market spreads.

Bissoondoyal-Bheenick (2004) analyzed 95 countries which received ratings from both Moody's and Standard & Poor's in the period between 1995 and 1999. These 95 countries were divided into two broad samples: high-rated countries consisting of 25 countries which received a rating of AAA or AA, and low-rated countries comprising of 70 countries with a rating of A or lower. Bissoondoyal-Bheenick (2004) argues that this division has been made, because the major CRAs acknowledge that the relevance of specific economic or financial indicators differ between developed and developing countries. Therefore, the division between high rated and low rated countries enables Bissoondoyal-Bheenick (2004) to compare the determinants of sovereign ratings between developed and developing countries.

The main finding of the study is that quantitative variables only reflect the sovereign rating criteria partially, which is in line with the statements by the CRAs and research from other academics. Moreover, Bissoondoyal-Bheenick (2004) states that even the quantifiable indicators do possess qualitative and judgmental opinions as they are the result from a complex interaction of many socio-economic and political indicators.

The analysis showed that the relevance of the different economic variables differs among the two samples of high rated and low rated countries. For both high and low rated countries GNP per capita and inflation are important and statistically significant indicators for determining sovereign ratings. When looking at the specific sample for low rated countries, current account balance and the level of foreign reserves are important in the determination process of sovereign ratings.

The research carried out by **Mellios & Paget-Blanc (2006)** represents data from 86 countries with a rating from the three CRAs on 31 December 2003. For each of the countries, values of 49 political and economic indicators were obtained from Fitch Ratings' *Sovereign Comparator*. According to Mellios & Paget-Blanc (2006), political factors are important for determining sovereign ratings as the rating represents the willingness of a sovereign to repay its debts.

Unlike most studies on the determinants of sovereign ratings, Mellios & Page-Blanc (2006) performed a Principal Components Analysis (PCA) to identify the weight of the 49 indicators which are divided into 13 overarching factors in the rating process. The three factors which explain the largest part of the variance are economic development, public indebtedness and quality of governance or political stability.

Zooming into the individual determinants of the sovereign ratings, the income per capita, government income and changes in the real exchange rate have a positive effect on a sovereign rating, while inflation rate has a negative one. Also the indicator if a sovereign has already defaulted earlier is recognized as a crucial determinant for the rating.

Hill, Brooks and Faff (2010) conducted a research on 129 rated sovereigns from the three major rating agencies, Fitch, Moody's and Standard & Poor's in the period between 1990 and 2006. The outline of the research is to assess the variation in ratings between the three agencies. In order to be able to make comparisons between the different rating notations of the agencies, the typical symbols (i.e. AAA, BB+, C-) are converted into a linear scale from 1 to 21 (Table 2). The results show that the ratings differ between rating agencies. However, this difference is often characterized by a small proportion of one or two numbers on the linear scale (Hill et al., 2010). This implies that each rating agency differentiates on the used criteria and indicators for sovereign ratings to some extent.

The results of the analysis showed that there are six variables which are statistically significant for each of the three rating agencies, namely GDP per capita, GDP growth, debt history (indicating a default or debt restructuring in recent history), current account balance, the Institutional Investor rating and risk premium (Hill et al., 2010). Other often mentioned important indicators such as inflation, external debt or the fiscal balance have only been significant for one or two agencies.

The analysis of Hill et al. (2010) also shows that outlook (for S&P) and watch (for Fitch and Moody's) procedures from the agencies are strong predictors of changes in ratings from sovereigns. Outlook and watch data are periodical updates of a current sovereign rating and describe the present status of a sovereign along with a positive, neutral or negative signal.

Afonso, Gomes and Rother (2011) did research on the short- and long-run determinants of sovereign ratings in the period between 1995 and 2005 on 130 rated countries. Different in this

research is the use of panel data in order to not only examine how agencies assign a rating, but also how they deal with upgrades and downgrades. The distinction between short- and long-run determinants can be important for governments as they can identify which indicators should be improved in order to receive a higher rating, which in turn could be a cause for a change in specific policies.

When identifying the results of the analysis, Afonso et al. (2011) conclude that there are four core variables which are important determinants of a sovereign's rating on the short-run: GDP per capita, GDP real growth rate; government debt and government deficit. Government effectiveness, external debt, foreign reserves. Also a dummy which represents past defaults of sovereigns proved to be significant.

Bozic and Magazinno (2013) used panel data analyzing 139 countries in the period between 1975 and 2010. What is different in this research is that the authors divided the total time period into two sub-samples: the period 1975-1996 and 1997-2010, which characterizes periods before and after the Asian crisis. Another aspect which makes this research unique is that the countries are grouped in different categories. These categories are based on the level of economic development and indebtedness. These categories allow the authors to compare outcomes between developed and developing countries and countries with levels below and above 60 percent debt as a percentage of GDP (Bozic & Magazzino, 2013).

The analysis showed per capita GDP, inflation, fiscal balance, government debt, default history and current account balance all have a significant effect on the ratings. However, the level of development and the level of indebtedness of individual countries are factors which have to be taken into account and which have considerable effect on the ratings. This means that the results showed that agencies allocate different weights to indicators if the country belongs to a different group; developed vs developing ones, using the OECD classification; or countries with a level of government debt higher or lower than 60%, in accordance with the threshold established in the Maastricht Treaty (Bozic & Magazzino, 2013).

Conclusion

This sub-subchapter discussed several relevant studies which try to identify which economic, political or social determinants are the most important for CRAs during the rating process. This has been the topic of many studies, because CRAs do not provide full details on the determinants of the rating agencies. The CRAs also acknowledge that there is a qualitative aspect to the rating process, so it is a challenge for academics to uncover this 'mystery'.

In above sub-subchapter, among the wide variety of studies, six studies which are deemed the most relevant have been analyzed. Each of the studies contribute in its own way substantially to the final outcomes, for example through methodological changes or by taking a different sample than most others. It can be concluded that GDP per capita is the one variable which comes back in most studies as an important determinant for sovereign ratings. Also, the default history, external debt, fiscal balance, and inflation can be considered as important indicators which definitely are taken into consideration by CRAs when assigning a sovereign rating. A summary of the above mentioned studies is provided in Table 1.

Author(s)	Sample	Time period	Determinants
Cantor & Packer (1996)	49 countries	1991-1995	Per capita GDP, GDP growth, inflation, external debt, economic development, default history
Bissoondoyal-Bheenick (2004)	95 countries	1995-1999	Per capita GNP, inflation, government financial balance/GDP, government debt/GDP, foreign reserve, current account/GDP, net exports/GDP
Mellios & Paget-Blanc (2006)	86 countries	2003	Per capita GDP, government income, government debt, default history, inflation
Hill et al. (2010)	129 countries	1990-2006	GDP per capita, GDP growth, debt history, current account balance, the Institutional Investor rating and risk premium
Afonso et al. (2011)	130 countries	1995-2005	GDP per capita, GDP real growth rate; government debt; government deficit. Government effectiveness, external debt, foreign reserves; default history
Bozic & Magazzino (2013)	139 countries	1975-2010	per capita GDP, inflation, fiscal balance, government debt, default history and current account balance

Table 1: Summary of Studies on Determinants of sovereign ratings

2.3 Impact of Sovereign Ratings

Following the numerous changes in the early 1970s, discussed in sub-chapter 2.1, a process of transformation started for the CRAs. According to Sinclair (1994b), CRAs became so-called private makers of global public policy. Paradoxically enough, private parties such as CRAs with profit maximization as their number one goal, decide over 'public goods', because they have to provide essential information on the creditworthiness of companies and, more importantly, sovereign countries (Gavras, 2010).

Little research has been conducted on the implications these ratings, or downgrades of ratings, could have on governmental policymakers. There have been several studies that perceive CRAs as sources for political or economic influence (e.g. Datz, 2004; Sinclair, 2005). Most of these studies are based on desk research by providing linkages between theory and practice. To my knowledge, the recent study by Soudis (2015) is the first and only one who tried to identify a statistical relation between sovereign ratings and changes in public policies. In this sub-chapter, the most relevant studies on the influence of CRAs on policymakers are analyzed.

Impact of ratings on credit spreads

Cantor & Packer (1996) found evidence for the variations in credit spreads as they constructed an event study in which seventy-nine rating announcements were analyzed. In this regard, rating announcements have been identified as actual upgrades or downgrades or changes in the outlook (negative, neutral or positive) of sovereigns. These announcements have been compared with the variation in credit spreads. Credit spreads, or Credit Default Swap (CDS) spreads, are contracts which can be considered as insurance against defaults by sovereigns (Hull et al., 2004). Therefore, the credit spreads can be expected to be low when ratings are relatively high and high when ratings are relatively low.

Their analysis showed that the rating announcements, reflecting the rating agencies' opinions, do have an independent and significant effect on the spread of credit to sovereigns. A rating announcement accounts for 63 percent of the movements toward an expected direction in credit spreads, depending on the nature of the rating. This means that a downgrade or a negative outlook increases the variation in credit spreads significantly and an upgrade or positive outlook decreases

the variation in credit spreads significantly as there is less risk for the lender for a default of a borrowing country (Cantor & Packer, 1996).

Contrarily to the study of Cantor & Packer (1996), **Kiff, Nowak and Schumacher** (2012) argue that the CRAs influence in the market is not unrestricted. Despite the strong correlation between credit spreads and ratings, CRAs do not have unlimited power to control the bond market to their wishes. They argue that only in between 45 and 51 percent of the rating events for advanced and developing sovereigns are associated with a change in the expected direction of the spread. This implies that spreads are approximately as likely to increase as they are to decrease following a special rating event, i.e. a downgrade of the rating (Kiff et al., 2012).

This implies that it can be assumed that credit spreads and the height of borrowing costs are related to sovereign ratings. CRAs put pressure on those vulnerable governments to adopt policies coming from the mental framework of the agencies. Every sovereign wants this rating to be as high as possible so that they do not encounter problems when borrowing credit. This is confirmed by Elkhoury (2009) who argues that because of these ratings countries will adopt policies that address these ratings on the short-run to reduce the possibility of downgrades. However, Elkhoury does not provide any suggestions on the types of policies which should be implemented in order to avoid a downgrade or aim for an upgrade.

Private agencies as public policy makers

The relationship between sovereign ratings and CRAs can be partially explained by the principal-agent theory. **Sinclair (1994b)** argues that a lot has changed because of the increased importance and centralization of the financial sector in the American economy and the global economy. This centralization, in which a small group of financial institutions, including CRAs as the gatekeepers of large amounts of credit, has a lot of power is commonly referred to as 'financial hegemony' (Mintz & Schwartz, 1990). This hegemony can have implications for public policy as the concentration of capital at a few institutions gives power to these institutions to impose its own policies, without the intervention of a state, thus taking a role of private policy maker (Mintz & Schwartz, 1990).

The source of this policy making role attributable to CRAs is based on the assumptions of principal-agent theory. This means that investors are the principal and that CRAs act as the agents of these

investors. For investors, the disintermediation of the financial market means that agencies fill the gap between investors and markets as a third-party (Sinclair, 1994b).

However, the principal-agent relationship between CRAs and investors has to deal with typical problems of information asymmetry in order to cope with the uncertainty in the financial markets (Elkhoury, 2009). The principals, which are private investors or governments, give the agents, the CRAs, the authorization to control large amounts of capital flows. Over time, however, this control process gives CRAs the opportunity for specialization (White, 1985). There are two types of specialization in this case. At first, professional specialization which involves specialization in analytical skills (White, 1985). The second type is rooted specialization which encompasses the local knowledge within organizations. This type of knowledge encompasses the deeply rooted skills of employees within an organization resulting from their focus on specific aspects of a business. According to White (1985), the problem with specialization is that there is a tendency towards reversal of control.

When implementing this principal-agent theory and the two types of specializations on the case of CRAs and governments, it is clearly visible that CRAs possess both types. Over the years, CRAs became absolute specialists in the financial market in the field of borrowing and lending credit (Sinclair, 1994b). Thus they possess both professional specialization, looking at their analytical capacities and rooted specialization, looking at their specialist knowledge on issuers of securities and bonds (Sinclair, 1994b). Therefore, because sovereigns or investors are dependent upon the opinions, knowledge and expertise of the CRAs, the principal becomes under the control of the agent, which is the exact opposite of the original relationship between the principal and the agent.

Mental Framework of Rating Orthodoxy

This reversed relationship between CRAs and sovereigns or investors has some implications for policies in rated countries as CRAs are able to dictate these policies. According to **Sinclair (2005) c**ountries become susceptible to the conceptions of what these CRAs deem as good governance and sound macro-economic policies, which were largely guided by the specific mental framework of rating orthodoxy within the American CRAs' rating activities. This mental framework clearly favors the Anglo-American neo-liberal ideology, i.e. liberalized controls of capital, governance models that highlight maximum value for shareholders or investors, disintermediated financial

systems, and more flexibility on the labor markets. As a consequence, the CRAs implicitly govern domestic policies of economies looking for credit (Sinclair, 2005).

A good example which shows how the rating agencies exercise their power in order to impose these neo-liberal ideas of good governance and the arbitrariness of ratings, is the one from Argentine and Brazil. Argentine received an upgrade to B1 from B3, where Moody's highlighted the "significant steps in dismantling administrative and regulatory controls within the country" (Waters, 1992, p. 21). However, around that time, Moody's did not give an upgrade to Brazil, despite its recently agreed upon debt accord between the country and its bank creditors (Sinclair, 1994b). This suggests that rating agencies' opinions about what policies are deemed appropriate and inappropriate are important indicators during the process of rating assessment.

According to **Paudyn** (2013), CRAs are powerful players in the international financial market as gatekeepers for substantial amounts of capital. Capital that is capable of affecting the borrowing costs for sovereign countries (Paudyn, 2013). This means that lower ratings for countries cause certain invisible pressures on governments to adopt prescribed policies. These policies should be in consonance with the views by the CRAs, because ratings are a reflection of the adherence of governments towards the Anglo-American versions of capitalism and neoliberalism. For example, this approach prevents governments from adopting policies which facilitate price controls as this would harm free trade in the market (Paudyn, 2013).

Imposition of neoliberal reforms

Datz (2004) conducted a research in order to investigate whether there is a power shift from the public sector to the private sector. In this regard, Datz (2004) analyses the influence of credit rating agencies on developing countries as these countries are more or less forced to adopt policies that reduce their risk of default. The Argentine crisis of 2001 is taken as a case study in order to prove these claims.

Datz (2004) acknowledges that, in line with Rosenau's (1992) and Sinclair's (1994a) opinions, CRAs take a powerful position in the market of financial transactions and that they also can be considered to be private actors of public policy making. Moreover, Datz (2004) argues that the implication of this enhanced power is an increased control over governments in developing countries. The sovereign ratings assessed by the CRAs are mainly assigned to address the ability

and willingness of a sovereign to repay its debts. Therefore, Datz (2004) refers to this uncertainty regarding the repayments of sovereign debts as the sovereign risks.

In the case of Argentina, Datz (2004) mentions that CRAs played a very bad role by forcing the government to implement neoliberal policies, in order to reduce the risk, as a way to set a good signal to the market. Argentina linked its peso to the dollar in 1991 in order to reduce inflation. However, it is important to note that this linkage by the US was made to reduce sovereign risk of Argentina and to make a signal to the market on Argentina's willingness to comply with neoliberal reforms (Datz, 2004). However, the short period of relative wealth in Argentine soon collapsed as a result of the Asian crisis, after which the Argentinian peso devalued quickly. This example shows the power sovereign ratings and thus agencies could have and the vulnerability of countries under pressure trying to attract credit from the financial markets (Datz, 2004).

Coercive Pressures

Soudis (2015) based his study on the views of DiMaggio and Powell (1991) about the theory institutional isomorphism. The main concepts from institutional isomorphism are the isomorphic pressures which, in this regard, have been put on sovereigns. There are three types of isomorphic pressures: normative, coercive and mimetic pressures.

According to Soudis (2015), normative pressures are about the neo-ideological views from CRAs and their perceptions of what can be seen as a good or a bad policy, which is in line with the views we saw earlier in this sub-chapter. Also, CRAs are able to form the perceptions of creditors and debtors as they simply reduce a sovereign's creditworthiness in a symbol. If a country deviates from the CRAs' mental framework of good policies, this is perceived as a direct attack towards creditworthiness as the CRAs believe that their ideas are the ones to follow. Therefore, CRAs from developed countries create a sort of government-at-a-distance over developing countries (Sinclair, 2005). These normative ideas can also result in an increasing number of countries that want to behave accordingly with their peers and thus adopt similar policies, which is called a mimetic pressure.

The third, and most important, pressure from this theory are the coercive pressures. In their analysis of isomorphic pressures, DiMaggio and Powell (1991) describe coercive pressures as follows: "coercive isomorphism results from both formal and informal pressures exerted on organizations

by other organizations upon which they are dependent and by cultural expectations in the society within which organizations function" (DiMaggio & Powell, 1991, p. 67).

Characterization of debt and issuer.		S&P	Ratings Moody's	Fitch	Linear Transformation
Highest quality	*Investment grade*	AAA	Aaa	AAA	21
High quality		AA+	AA1	AA+	20
		AA	AA2	AA	19
		AA-	AA3	AA-	18
Strong payment capacity		A+	A1	A+	17
		A	A2	A	16
		A-	A3	A-	15
Adequate payment capacity		BBB+	Baa1	BBB+	14
		BBB	Baa2	BBB	13
		BBB-	Baa3	BBB-	12
Likely to fulfil obligations, ongoing uncertainty	*Speculative grade*	BB+	Ba1	BB+	11
		BB	Ba2	BB	10
		BB-	Ba3	BB-	9
High credit risk		B+	B1	B+	8
		B	B2	B	7
		B-	B3	B-	6
Very high credit risk		CCC+	Caa1	CCC+	5
		CCC	Caa2	CCC	4
		CCC-	Caa3	CCC-	3
Near default with possibility of recovery		CC	Ca	CC / C	2
Default		SD	C	DDD DD	1
		D		D	

Table 2 – S&P, Moody's and Fitch rating scales
Source: Afonso, Gomes & Rother (2011)

In other words, coercive pressures indicate that certain organizations are more or less forced to adopt policies, because other, more powerful organizations are in control of resources which could be critical for the former (Guler et al., 2002). What's more, these powerful organizations are able to impose sanctions on the other organizations, which causes another incentive to comply with the prescribed policies. Resources are thus used as an incentive or penalty (Guler et al., 2002).

Soudis (2015) tried to identify whether developing countries have more significant changes in policies than developed countries. Also, he analyzed if downgrade frequency has a significant effect on changes in polices. This means that he identified whether countries that experienced

downgrades more often have more significant changes in policies than countries which are downgraded less frequently. Soudis used a dataset from Afonso et al. (2011) that spans from the early 1970s until 2006 and embodies 130 countries.

Soudis (2015) took four policy indicators as dependent variables in order to operationalize changes in policies. These policy indicators are the changes in regulation, legal protection, inflation and general government final consumption as percentage of GDP. These indicators have been chosen on the basis of previous research on the determinants of sovereign ratings and their appearance in recommendations from the CRAs (Soudis, 2015). In order to identify the change, Soudis calculated the difference between the initial value of the specific indicator, which is the value when a country first received a rating, and the value of the indicator in the last known year.

As independent variables, Soudis (2015) calculated the difference between the initial rating of a country, which is the first received rating of a country in a particular year, and the last known rating of a country. This difference is then divided by the number of years the country received a rating. This outcome is used as independent variable. For this purpose, he used the linear scale from Table 2. Another independent variable is whether these countries had to deal with downgrades in the period since the first and last rating and how often this happened. The total number of downgrades of a country is divided by the number of years the country received a rating.

Soudis (2015) acknowledges that there are other forces which are able to influence policymakers following a downgrade. Therefore, he added several control variables to the model which are the level of economic development, economic openness and the ideology of a government in a country. The results of the study showed that there is no clear evidence that ratings directly have an effect on domestic policies. Developing countries do not tend to have more policy changes than developed countries and the number of downgrades a country experiences over the years does not have a significant effect on changes in policies.

2.4 Prescribed policies by CRAs

In the previous sections, the most important determinants of sovereign ratings are discussed along with the impact these ratings and thus the agencies have on public policies. Governments, especially vulnerable ones in developing countries, try to get access to large amounts of credit on the international financial markets by aiming for the highest possible rating. The higher the rating,

the more likely a creditor can assume that the debtor is able and willing to repay its debts. A higher rating also means lower borrowing costs in terms of interest. However, as CRAs are the only institutions who provide these ratings, countries are more or less narrated to them.

Consequently, countries are pressured to adopt policies which are deemed good by the CRAs, which favors the mental framework of the neo-liberal ideology (Sinclair, 2005). This ideology aims for a more liberalized economy, highlighting the role of the private sector in the economy with a lot of flexibility on the labor markets, deregulation, emphasis on the individual and little involvement from the government in the economy.

When looking at Table 1, in which the determinants of sovereign ratings are highlighted, it is clearly visible that variables as GDP per capita, inflation and government debt are important indicators for the determination of sovereign ratings. According to the information in sub-chapter 2.2, it is clearly visible that the three CRAs also deem these variables as important indicators for sovereign ratings.

A low level of inflation is considered important as high inflation distorts market activity. The most important policy to maintain low inflation are monetary policies from the central banks of countries. These banks can change the interest rates in such a way that consumer spending rises (at low interest levels) or falls (at high interest levels). Therefore, it can be assumed that CRAs would encourage monetary policies which aim for a true low level of inflation. A good example in this regard is the one from Datz (2004), who analyzed the role of CRAs pressuring a vulnerable Argentina to implement a disinflationary policy which eventually proved to be disastrous.

Government debt, regularly measured as a percentage of GDP, is also mentioned as important determinant for sovereign ratings, both by academics and agencies. The debt of a government rises when a government spends more than it receives from tax, this is called a deficit on the budget. The higher the debt, the higher the interest a government has to pay which harms the financial stability. The main policy area to reduce a budget deficit is logically the fiscal policy. Possibilities to reduce a budget deficit is for instance to raise the taxes or to cut government spending. Economic growth, measured as GDP per capita growth for instance, is also a good solution as the tax revenue increases without actually raising taxes. CRAs would encourage a fiscal policy which aims for a reduction or stabilization of the government debt.

According to Biglaiser & Staats (2012), the enforcement of the legal framework and protection of property rights are also important determinants for ratings. Policies in this regard refer to the ability of a country to enforce contracts, protect property rights and to what extent the courts act independently.

Another important aspect of the neo-liberal framework is the endeavor towards deregulation and individual freedom (Sinclair, 2005). Countries which value these features highly, most likely have policies which stimulate and facilitate the entrepreneurship of individuals. For example, individuals would be given a lot of freedom in terms of costs and time to start, run and close a business. CRAs would actively stimulate policies which would aim for a high level of entrepreneurial freedom.

Finally, Biglaiser & Staats (2012) argue that labor market regulations are also important determinants. In this regard, the existence of a minimum wage in a country and the hiring and firing practice are of importance. CRAs would stimulate policies towards a more flexible labor market in which it would be easier to switch jobs, again relying on the responsibility of the individual. Following the French downgrade from AAA to AA, in 2012, Moody's specifically mentions the challenges France faced to reform its rigid labor market (Spiegel, 2012). Moody's would prefer, as Anglo-American neo-liberal company, more flexibility on this labor market.

Taking above information into account, it is clearly visible that many policies could encounter changes following a rating or a downgrade of a rating. Monetary policies, fiscal policies, policies regarding the enforcement of contracts and protection of property rights, policies regarding labor market regulations are all examples of domestic economic policies which could be affected. When analyzing the importance of the indicators of sovereign ratings, in which inflation comes forward many times, a country's monetary policy is likely to be affected as a result from a downgrade.

2.5 Other Factors

Previous sections identified the determinants of sovereign ratings and which policies could be affected as a result of the tendency of CRAs to prescribe policies along their neo-liberal mental framework. However, it is difficult to find a one-on-one relationship between the occurrence of a downgrade and a change in policy as many factors could affect policy decisions. Therefore, control variables that potentially influence the dependent variable will be discussed. It is noteworthy,

however, that there has been conducted little empirical research to this topic, so it is difficult to compare control variables between studies.

The first factor that may influence the change in policies is economic development. Soudis (2015) argues that richer countries are expected to be less impacted by downgrades than poorer countries. This information would indicate that there is an interaction between the downgrade on the one hand, and the level of economic development on the other hand. However, the level of development as variable itself also affects the intentions to change policies, because richer countries are better able to raise capital internally and thus have less necessity to turn to the financial market to borrow credit. This indicates that more developed countries have less intentions to radically change policies. Also, in general, developed countries already have implemented more policies which fit in the neo-liberal mental framework. Additionally, according to Afonso et al. (2011), more developed economies are expected to have a more stable institutional framework which implies less vulnerability for external shocks. This means that a downgrade gives a developed country less incentive to change policies than developing countries.

Another factor that may influence changes in policies is the ideology of the executive in a country. This factor controls for domestic political forces in countries which possibly affects the tendency towards deregulation and liberalization in a country (Soudis, 2015). For instance, left-wing governments would be stricter on labor market regulations and larger government involvement in the overall economy of the country. This could negatively affect the willingness of a country to reform its policies after a downgrade towards more neoliberal policies.

The third control variable is the default history of a country. This variable is an important determinant of sovereign ratings (i.e. Bozic & Magazzino, 2013; Hill et al., 2010). If a country has defaulted already in recent history, the expectation would be that the particular country would change policies following a downgrade in order to prevent the possibility for risking an actual default again. Sovereign defaults can be defined as "the failure of an obligor to meet a principal or interest payment on the due date contained in the original terms of debt issue. A debt restructuring where the new debt contains less favorable terms than the original issue is also counted as default" (Reinhart & Rogoff, 2004, p. 2).

2.6 Conclusion and Theoretical expectations

The process of financial disintermediation gave the CRAs substantial power in the international financial markets as they became the gatekeepers of large amounts of credit. The CRAs became more and more specialized in the field of credit ratings in such a way that investors and sovereigns became dependent upon their expertise and knowledge. This could be seen as a reversed principal-agent relationship as the CRAs are in control of the assessment of creditworthiness of sovereigns.

Ratings are considered in the financial markets as the most important instrument to assess the creditworthiness of a country or company. Many parties in the financial markets base their opinions on these ratings, which in turn could have implications for public policies. CRAs know that they are in control of resources which could be critical for a sovereign and they are in control of the assignment of creditworthiness of sovereigns. The rating shows the ability and willingness of a sovereign to repay its debts. All sovereigns want to have access to credit with low interests and thus they will implement policies which are in accordance with the views by CRAs and could have positive implications for the rating on the short-run.

It is in the interest of the rated country to have a high rating as it is the main symbol for creditworthiness in the financial markets. However, there are also factors which have to be taken into account before analyzing the relationship between a downgrade and a tendency towards more neo-liberal policies. The level of economic development of individual countries is an important factor , just as the ideology of the executive and the default history of a country

All in all, downgrades in this regard can be seen as an incentive for sovereigns to adopt the prescribed policies, and therefore the main hypothesis of this thesis is:

Hypothesis 1: Downgrades in ratings have an effect on economic policies of countries

2.7 Model

Since different factors could have an influence on the occurrence that a downgrade directly implies changes in policies, it is necessary to put the variables in a conceptual model.

Based on the theory, the independent variable is the occurrence of a downgrade in a country in year x and the dependent variable is the change in policy. A change in policy in this regard is captured as a change towards more neo-liberal policies. The level of economic development has a negative effect on the possibility of changes in policies as developed countries are better able to raise capital internally and thus have less necessity to turn to the international financial markets. Therefore, developed countries have less incentives to radically change their policies following a downgrade. The default history of a country has a positive effect on the possibility of policy changes as countries do not want to be in the same, bad, position again. The executive ideology, in this regard left- vs. right/center-oriented executives, have a positive effect on policy changes towards more neo-liberal policies as right- or center-oriented executives are more keen to adopt the neo-liberal prescribed policies by the CRAs in order to receive a higher rating. Contrarily, following their ideology, leftist governments have less incentives to adopt neo-liberal policies.
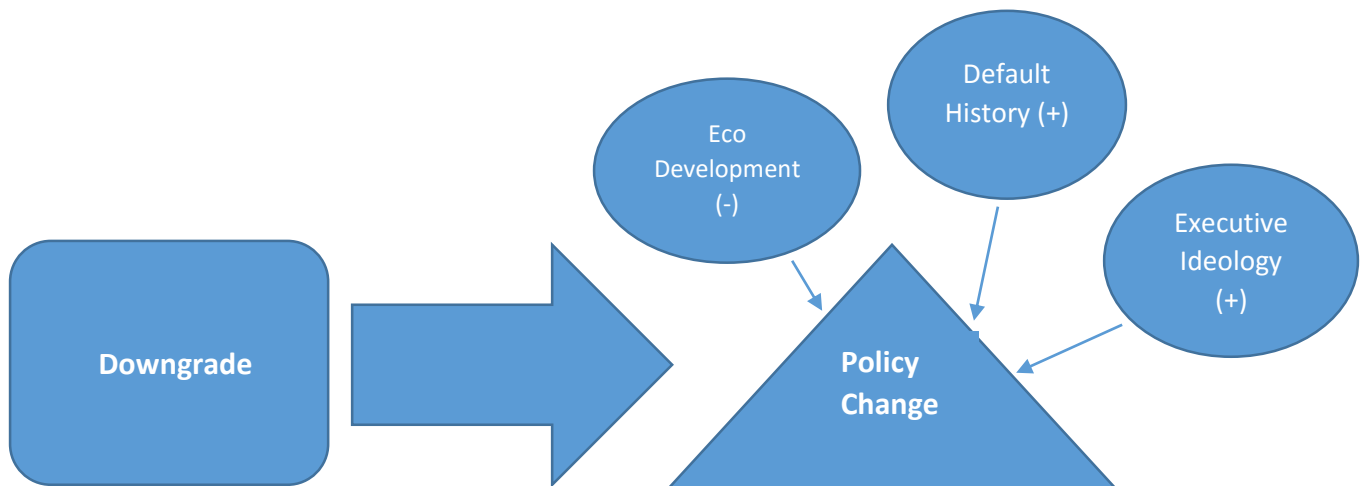

Figure 1: Conceptual Model

Chapter 3: Research Design and Methods

This chapter discusses the research design of the study and the methods of choice. The first sub-section will explain what kind of research will be conducted along with a presentation of the regression model. Secondly, the different variables will be clarified including the dependent, independent and control variables along with an explanation on the way these variables are operationalized. Finally, an explanation is provided on the sample of the study and the validity and reliability of the research design will be discussed.

3.1 Research Design

The research design for this thesis will a cross-sectional design with a large-N. A cross-sectional research design "allows observation in phenomena in more natural, realistic settings and increases the size and representativeness of the population studies" (Buttolp Johnson & Reynolds, 2008, p. 156). In other words, either an entire population or a subset of a population is selected. Subsequently, data is collected on this population in order to answer the research questions (Olsen & St. George, 2004). The information about the variables X and Y explains what is going on with the population at that particular moment in time, contrarily to the other research methods which includes the variable of time, a longitudinal or cross-sectional panel analysis.

For the purpose of this research, data on the ratings obtained by the rated countries from the major CRA, Standard & Poor's is collected. The large-N design refers to the number of cases which could be included in the sample. The number of cases refers to the number of countries and years in the sample for which all variables are collected. In the only comparable study on the effects of rating activities by CRAs on public policies also a cross-sectional design is chosen (Soudis, 2015). This design is chosen, because downgrades of ratings occur occasionally and irregularly, so it is much better to look at the effects of the particular downgrades on policies than to identify a certain pattern over time. With this large-N cross-sectional design one is able to make generalizations on the studied sample. However, according to Gschwend & Schimmelfennig (2007) no conclusions can be drawn on specific cases, which are the countries, inside the sample. In order to identify causality for specific case, a detailed case study should be established.

3.2 Multivariate Regression

For the empirical part of the study, the multivariate regression method will be utilized to analyze the data in the sample. The analysis will be carried out with the statistical software from Stata. The multivariate regression is a common used method to analyze the outcomes of a dependent variable (Y) when putting an independent variable (X) into the regression model (Lewis-Beck, Bryman & Liao, 2004). What is different between a multivariate regression and another widely used technique, the bivariate regression, is the addition of control variables and, optionally, dummy variables in the multivariate regression. A bivariate regression excludes control variables and/or dummy variables and focuses purely on the influence of the independent variable on the dependent variable.

Most statistical tests have to meet some assumptions about the variables in the analysis. The results can be considered as trustworthy when these assumptions are met. For the multivariate regression method, generally there are four assumptions which a researcher should deal with when conducting a statistical analysis (Osborne & Waters, 2002). The four assumptions are:

Normal distribution: The variables included in the regression model are supposed to be normally distributed. Variables which are not normally distributed can cause a misinterpretation of the relationship between the variables and the performed tests (Osborne & Waters, 2002).

Linearity: The relationship between the independent and dependent variables can only be estimated in a multivariate regression when this relationship has a linear nature (Osborne & Waters, 2002).

Multicollinearity: The issue of multicollinearity occurs when several independent variables in the model measure more or less the same. Multicollinearity appears when the correlation coefficient between two variables is close to perfect, this means a correlation coefficient above or below -0.8 or 0.8.

Homoscedasticity: The assumption about homoscedasticity means that the variance of the errors is the same across all levels of the independent variables. If the variance is not equally distributed, then we speak of heteroscedasticity.

For the purpose of this research, it is important to mention that downgrades of ratings probably do not have an immediate effect on policies. Therefore, a time lag of one year is included to study the effect on changes in policies the year after a downgrade occurred. This one year is based on the

assumption that rating frequencies by CRAs are relatively high so quick action from public administrations regarding policy changes in rated countries is required as a response to the downgrade.

In order to analyze the hypothesis, a regression model is established. In this model, all variables are depicted. The dependent variable, which is changes in policies towards more neo-liberal policies, is depicted on the left side of the equation. The operationalization of this dependent variable will be presented in the next section. The independent and control variables will be put on the right side of the equation. These variables are: rating downgrades, economic development of a country, the default history of a country and the executive ideology of a country.

$$Policy\ changes_{t+1} = \beta_0 + \beta_1 Down_t + \beta_2 Dev_t + \beta_3 DH_t + \beta_4 Exe_t + \varepsilon$$

In this model, the small t represents the year in which a downgrade occurs. The t+1 refers to time lag of the study: the dependent variables are analyzed in the year after a downgrade occurred.

- t refers to the year in the period 2004-2013
- β_0 refers to the constant term in the equation
- Down refers to the rating downgrade of a country
- Dev refers to the economic development of a country
- DH refers to the default history of a country
- Exe refers to the executive ideology of a country.
- ε refers to the error term of the model.

3.3 Operationalization of the Variables

This sub-section provides the operationalization of the different variables which will be used in the regression model.

Dependent Variable

The dependent variable for this research is changes in economic policies in a country. In sub-chapter 2.4, an indication has been made on what types and kinds of policies could possibly be affected by the rating actions, and downgrades of these ratings. According to research on the

determinants of sovereign ratings, inflation is a very important indicator for CRAs. Therefore, monetary policy is one of the economic policies which will be focused on. Additionally, the neo-liberal CRAs strive for more deregulation and responsibility for the individual. This indicates that policies supporting entrepreneurial freedom are likely to be promoted by downgrades. Finally, both academics and rating agencies mentioned that regulations regarding the labor market are important measures. CRAs would like to see more flexibility on the labor market. Also fiscal policies and policies regarding the enforcement of contracts and protection of property rights are deemed sensible towards rating actions or downgrades of CRAs.

In order to test the effect of downgrades by CRAs on those mentioned economic policies, it is important that these changes in policies are operationalized well. For this operationalization, an index is used, the Economic Freedom Index. This index is designed by the Heritage Foundation and comprises of ten specific freedoms, which are weighed equally in order to represent a country's economic freedom.

Economic freedom is characterized as the fundamental right of each human on this planet to take control of his own labor and property. In a society which is economically free, individuals are free to work, produce, live and invest in any way they want. In such societies, governments allow labor, capital and goods to move freely and they refrain from coercion of liberty beyond the necessary to protect the country (Heritage, 2016). According to the Heritage Foundation, this could lead to greater per capita wealth, more democracy, healthier societies and elimination of poverty.

It is important to make a linkage between the chosen index and the topic of this thesis, namely the impact of downgrades on changes in policies. As explained in sub-chapter 2.6, CRAs obtained a lot of power in the international financial markets. This power is best visible in the mental framework of rating orthodoxy, first mentioned by Sinclair (2005). According to this framework, countries should act in accordance with the policies which the CRAs deem as appropriate. The CRAs are Anglo-American institutions and this mental framework clearly favors the Anglo-American neo-liberal ideology, i.e. less intervention from the government, deregulation, disintermediated financial systems, more flexibility on the labor markets and more entrepreneurial freedom.

In total 186 countries are assessed by the Heritage Foundation. Each of the indicators is graded, according to certain formulas, on a scale of 0 to 100, in which 0 represents the lowest level of freedom and 100 represents the highest level. The average of each country represents the score for the Economic Freedom Index. The ten specific freedoms can be grouped into four broad categories (Heritage, 2016).

1. Rule of Law (property rights, freedom from corruption)

2. Government Size (fiscal freedom, freedom from government)

3. Regulatory Efficiency (business freedom, labor freedom, monetary freedom)

4. Open Markets (trade freedom, investment freedom, financial freedom).

Rule of Law:

- Property Rights: a qualitative assessment of the extent to which a country's legal framework allows individuals to accumulate private property. This is actively secured by laws which are enforced effectively by the government.

- Freedom from corruption: corruption deteriorates economic freedom by adding uncertainty and insecurity into the economy. The score for this component is derived from the Corruption Perception Index (CPI) from Transparency International.

Government Size:

- Fiscal Freedom: this component shows the burden of taxes in countries. This reflects both marginal tax rates on individual and corporate income and the overall level of taxation, reflecting direct and indirect taxes imposed by the government, as a percentage of GDP.

- Government Spending: this component considers the government expenditure as a percentage of GDP and revenues generated by state-owned enterprises and property as a percentage of total government revenue.

Regulatory Efficiency:

- Business Freedom: this indicator is taken by the Heritage Foundation from the Doing Business Index from the World Bank and comprises the efficiency of government regulation of business.

This component comprises measurements on the procedures, time and cost necessary for starting, operating and closing a business.

- Labor Freedom: This indicator, based on data from the Doing Business Index, evaluates the regulatory and legal framework of the labor market in a country. This component includes six factors, which are equally weighed, about regulations concerning minimum wages, hindrance of hiring additional workers, rigidity of hours, firing practices, a legally mandated notice period and a mandated severance pay.

- Monetary Freedom: This indicator combines price stability and price controls. Price stability is measured as the weighted average rate of inflation for the last three years. The existence of price controls within a country is assessed as a penalty of up to 20 points on the score on this indicator. Both inflation and price controls are considered to distort market activity. Credit rating agencies would encourage stable prices and absence of price controls

Open Markets:

- Trade Freedom: this indicator measures at which extent tariff and non-tariff barriers affecting imports and exports of goods and services. Tariff barriers are calculated as the trade-weighted average tariff rate and this average can vary from 0 to 100. The presence of non-tariff barriers can deduct this score up to 20 points, depending at which extent non-tariff barriers are applied in a country.

- Investment Freedom: this component measures a variety of regulatory restrictions which are imposed on investments. In an free country, there would be no restrictions on the flow of capital. A country in which individual and corporations are able to move their resources freely, without restriction, receives a score of 100 on investment freedom.

- Financial Freedom: the last component of the Economic Freedom Index measures the banking efficiency and to what extent the financial sector acts independently from an interfering government. In a free environment, the financial sector is characterized by an independent supervision from the central bank and minimum government interference. State ownership of banks and insurance companies reduces competition and lowers the level of services in general.

As discussed, many policies could possibly be affected by rating actions from CRAs. Therefore, I have chosen to focus on three economic policy indicators for this research. This means that three

components of one particular category will be analyzed in detail, which is the category of **Regulatory Efficiency**, consisting of Business Freedom, Labor Freedom and Monetary Freedom. These components of the Economic Freedom Index have the best match with the policies discussed in sub-chapter 2.4. To justify this claim, a table is established to compare the components of the Economic Freedom Index with the conclusion from sub-chapter 2.4. The results are demonstrated in Table 3.

It is noteworthy to mention that a change in policies according to the neo-liberal mental framework can be seen as a <u>rise</u> in the index score as neo-liberalism strives towards total economic freedom. The changes in policies will be captured by the changes in the values in the components of the Economic Freedom Index. Therefore, in order to compute the change in policies, the score of the country in the year a downgrade occurred is subtracted from the score the year after a downgrade.

Components Economic Freedom Index	*Important policies for CRAs (sub-chapter 2.4)*
Business Freedom: this indicator comprises the efficiency of government regulation of business practices. This component comprises measurements on the procedures, time and cost necessary for starting, operating and closing a business. The higher the score, the more freedom an individual an individual has in a country to run a business and endeavor its potential.	According to Sinclair (2005), an important aspect of the neo-liberal framework is the endeavor towards deregulation and individual freedom. Countries which value these features highly, most likely have policies which stimulate and facilitate the entrepreneurship of individuals. For example, individuals would be given a lot of freedom in terms of costs and time to start, run and close a business. CRAs would actively stimulate policies which would aim for a high level of entrepreneurial freedom.
Labor Freedom: This indicator evaluates the regulatory and legal framework of the labor market in a country. This component includes six factors, which are equally weighed, about regulations concerning minimum wages, hindrance of hiring additional workers, rigidity of hours, firing practices, a legally mandated notice period and a mandated severance pay.	Biglaiser & Staats (2012) argue that labor market regulations are also important determinants. In this regard, the existence of a minimum wage in a country and the hiring and firing practices are of importance. CRAs would stimulate policies towards a more flexible labor market in which it would be easier to switch jobs, without the existence of a minimum wage or a mandated severance pay. CRAs would again rely on the responsibility of the individual.

	Following the French downgrade from AAA to AA, in 2012, Moody's specifically mentions the challenges France faced to reform its rigid labor market (Spiegel, 2012). Moody's would prefer, as Anglo-American neo-liberal company, more flexibility on this labor market.
Monetary Freedom: This indicator combines price stability and price controls. Price stability is measured as the weighted average rate of inflation for the last three years. The existence of price controls within a country is assessed as a penalty of up to 20 points on the score on this indicator. Both inflation and price controls are considered to distort market activity. Credit rating agencies would encourage stable prices and absence of price controls.	According to research on the determinants of sovereign ratings, inflation is often mentioned. A low level of inflation is considered important as high inflation distorts market activity. The most important policy to maintain low inflation are monetary policies from the central banks of countries. These banks can change the interest rates in such a way that consumer spending rises (at low interest levels) or falls (at high interest levels). Therefore, it can be assumed that CRAs would encourage monetary policies which aim for a true low level of inflation.

Table 3: Comparison components EFI and policies deemed important by CRAs.

Independent Variable

The independent variable for this research is the ratings assessed by Standard & Poor's and more specifically, the downgrading of ratings initiated by them. The sample consists of the rating from Standard & Poor's, as this is the agency with the largest market share. Moreover, in the data from Standard & Poor's, the largest amount of countries is rated and the most downgrades are observed. Downgrading in this regard is the result of a lower rating for a country with respect to the previous years and will be operationalized as such. This could be a downgrade from AAA to AA+, so one level lower, or multiple levels. For this thesis, it is of less concern to which level the rating falls consequently of the downgrade, which means that in this research, there is no difference between a rating falling from AAA to AA+ or BBB- to B-. The occurrence of a downgrade is the focal point. The downgrade is conceptualized by a 1 in the dataset and a 0 if otherwise.

The ratings from the countries since 2004 are derived from several files, in which the sovereign rating history of Standard & Poor's is collected. For Standard & Poor's, the file was established

by the Securities and Exchange Commission. In order to test the quality and reliability of the ratings and dates in these files, the ratings were double- or even triple-checked with websites in which the ratings from S&P are presented in chronological order. While comparing these sources, no mistakes or differences were found.

Control Variables

In order to ensure the variation in the dependent variable is caused by the independent one, several control variables will be added to the model.

Economic Development is the first control variable. The level of economic development is measured by the GDP per capita in, which is generally seen as the most important determinant of a sovereign rating (i.e. Cantor & Packer, 1996; Afonso et al., 2011). This control variable is also used in the only somewhat similar study, in order to control for different levels of development within the sample (Soudis, 2015). The data for GDP per capita in constant 2010 US$ is taken from the World Bank (2016).

A country's **executive ideology** is the second control variable in this research. A country's executive ideology is measured on the basis of information from the Database of Political Institutions, originally composed by the World Bank and now hosted by the Inter-American Development Bank (Cruz et al., 2016). When the executive party in a country in a particular year is classified as center or right-wing according to the Database of Political Institutions, the country receives a 1. When the executive party in a country in a particular year is classified as left, thus defined as communist, socialist, social-democratic, or left-wing, the country receives a 0. Center- or right-oriented executives would be more keen to adopt more neo-liberal policies following a downgrade, thus the expected could be considered as positive.

The third control variable is the **default history** of a country. The information regarding the default history of a country is taken from the papers of Emanuel Kohlscheen (2010), for the period 1980-2005 and Carmen Reinhart (2010) for the information until 2009 and own observation for defaults after this year until 2013, i.e. Greece in 2012, see Appendix 1. 1980 is taken as the base year to consider a default as recent. When a country has defaulted on its foreign currency debt in this period, a country is marked with a 1 and a 0 if otherwise. To illustrate, Greece defaulted in 2012

but experienced downgrades in 2009 and 2013. For 2009 the default history of Greece is 0, for 2013 it is 1. Countries which defaulted in recent history are expected to be more eager to change policies according to the neo-liberal framework, because they are reluctant to end up in the same bad situation again. Therefore, a positive relationship is expected. In both papers, the definition of default is the one from Reinhart and Rogoff (2004), stated in chapter 2.5.

3.4 Sample

For this research one sample is established, from Standard & Poor's, the largest credit rating agency, with a market share of 45%, and has rated most countries compared to Moody's and Fitch. To make it clear, the outline of this study is to analyze the effect of downgrades in sovereign ratings to changes on policies towards neo-liberal policies. These downgrades are analyzed in the time period between 2004 and 2013. However, there have been some issues with the collection of the data which I would like to explain.

In order to make a comprehensive dataset, the rating of every country at 31 December of each year since 2004 is taken as the rating for that particular year, which is in line with the research conducted by Afonso et al. (2011). This has been an issue, because for some countries a rating is adjusted several times a year. Moreover, most countries have a period in which they do not receive an update on their rating since not much has been changed since the last rating or there are other circumstances. If this is the case, the particular rating for the subsequent year has been the same as the last rating a country received. This is done in order to make the full dataset complete, without any gaps. Finally, some countries did not receive a rating yet in 2004, but started to receive ratings later on in the process. These countries are excluded for the earlier years in the time period of the study, but are added later. In this sample, all downgrades in the research period are analyzed. However, for years where no downgrade occurred, only several points are analyzed per country, mostly once in three years. This in order to be sure that the downgrade variable is not a small fraction of the total sample. The division is roughly that one-third of the cases is a year with a downgrade and two-third of the cases are years without downgrades. An overview of the countries in the sample is provided in Appendix 2. The total N of the study is 362, consisting of 117 cases of countries and years with a downgrade and 245 cases in which no downgrade occurred.

3.5 Reliability and Validity

In order to be able to test the accuracy and credibility of the research, two criteria have to be met. These two criteria, which are validity and reliability are considered to be the most important criteria for the evaluation of research in social studies (Bryman & Bell, 2015). For validity a distinction is made between measurement validity, internal validity and external validity.

Reliability refers to the repeatability of the results of the study. In other words, the results of the study should be the same with the chosen variables over and over again, also under different circumstances (Bryman & Bell, 2015). In order to enhance the reliability of the study, the data used in the research is taken from trustworthy sources as the World Bank, the credit rating agencies and academic papers. The chosen variables are often used in other studies on credit rating agencies which strengthens the reliability of the study even more.

Measurement validity deals with the question: do the indicators really represent the concepts they are supposed to measure? (Bryman & Bell, 2015). In other words, measurement validity is about the operationalization of the variables. In order to ensure this type of validity, the chosen data has been chosen from trustworthy sources which offer extensive explanation on these data. Also, in order to conceptualize the variables as good as possible, references are made to academics who studied similar subjects in order to enhance the credibility of the chosen variables.

Internal validity relates to the issue of causality. Internal validity deals with the question whether the conclusion makes a justifiable causal relationship between the independent and dependent variables (Bryman & Bell, 2015). This means that if x causes y, can we be absolute sure that x really causes y, and not that another factor is responsible for the relationship. According to Bryman and Bell (2015), internal validity is typically weak when conducting a cross-sectional research, because it is difficult to discover a causal relationship resulting from data which is focused on one point in time. In order to improve causality between the independent and dependent variables, several control variables are added.

External validity is concerned with the question whether the results of the study can be generalized beyond the specific research concept (Bryman & Bell, 2015). In order to increase external validity, it is important to carefully design the sample and whether this sample represents the population. The large-N of 362, consisting of rating from 87 different countries, makes that it is reasonable to make generalizations on the total population of graded countries.

Chapter 4: Analysis

This chapter contains the results of the statistical analysis conducted on the basis of the variables and methods explained in Chapter 3. At first, descriptive statistics of the sample are presented. Secondly, the regression assumptions will be checked to ensure the strength of the outcomes. Furthermore, the results of the regression will be discussed in order to test the main hypothesis of this study. Finally, some conclusions on the outcomes of the operationalized variables will be drawn.

4.1 Descriptive Statistics

In order to begin the analysis, the frequencies of the dummy variables in the sample are provided in Table 3. This table shows that in the total sample, which include observations from the credit rating agency Standard & Poor's, there are 362 observations including 245 cases in the sample when no downgrade was experienced and 117 observations where a downgrade occurred. Furthermore, in the sample there were 237 observations in which a country never defaulted in the period 1980 and 2012 and 125 observations were a country have been defaulted in this period. Finally, the last dummy variable shows the executive ideology in a country in the research period, which shows that 243 observations show an executive which is center- or right-oriented and 119 observations in which a country's executive was left-oriented.

Variable	N	Percentage (%)
Standard & Poor's	362	100
Downgrades		
No downgrade	245	67.68
Downgrade	117	32.32
Total	362	100.00
Default History		
No default	237	65.47
Defaulted (1980-2012)	125	34.53
Total	362	100.0
Executive Ideology		
Left-oriented	119	32.87
Center/Right-oriented	243	67.13
Total	362	100.00

Table 4: Frequencies Dummy variables

Table 4 represents the descriptive statistics for the full sample of Standard & Poor's. For the dependent variables, both the values from the index and the components are presented and the change they encountered in this period. When there was no change in score the year after a downgrade, the delta of the variable receives the value of 0. The absolute values are shown to make it more clear for interpretation. As mentioned earlier, the values of the index can vary from 0 representing the least freedom and 100 meaning the highest level of freedom in that area.

The Business Freedom score in the sample shows a mean of 71.20, with a standard deviation of 13.95. The minimum score in the sample is attributed to India in 2010, with a score of 36.30, and the maximum score of 100.00 is awarded to Singapore in 2006, indicating that Singapore it is very easy in terms of time and money to start, operate and close a business. The average score for Monetary Freedom is 76.66 with a standard deviation of 7.72. The minimum score in the sample is 33.90, representing Belarus in 2004. The maximum score is 94.30, which is attributed to Japan in 2008, indicating a relative stability of prices and no existence of price controls. The last dependent variable, Labor Freedom, demonstrates a mean score of 63.49 with a standard deviation of 16.20 indicating a relatively large spread of the scores in the sample. The minimum score is 24.20, attributed to Venezuela in 2013. The maximum score is 100.00 and is awarded to Denmark in 2008, indicating that there is a lot of freedom for employees and employers regarding hiring and firing practices, no rigidity of working hours and that there are no legal barriers regarding a mandatory severance pay or the mandated notice period in case of redundancy.

The change in scores for each of these categories shows that the average change in the sample for the three components is -0.12 for Business Freedom; Monetary Freedom -0.04 and for Labor Freedom -0.16. This shows that on average, the scores for each of the measured components of the Economic Freedom Index, slightly decrease in the research period.

The variable which represent the level of development of a country, measured as the GDP per capita in constant US dollars (2010), shows a mean of $19,106.63 the sample with a standard deviation of $19.721,08, which implies that there are large differences between low and high levels of development. The minimum GDP per capita in the sample is attributed to Mozambique in 2004, with a GDP per capita of $318.01. The maximum GDP per capita is seen in Luxembourg in 2008,

with a GDP per capita of $107.141,25. The dummy variables downgrades, default history and executive ideology can only take the values of 0 and 1, indicating that not much can be said on these variables.

Variables	Obs	Mean	Stdev	Median	Min	Max
Business Freedom	362	71.20	13.95	70.10	36.30	100
ΔBF	362	-0.12	2.92	-0.35	-15.20	12.60
Monetary Freedom	362	76.66	7.72	77.60	33.90	94.30
ΔMF	362	-0.04	3.34	0.2	-12.60	21.00
Labor Freedom	362	63.49	16.20	62.60	24.20	100
ΔLF	362	-0.16	4.37	-0.20	-25.30	26.30
Downgrades (0-1)	362	0.32	0.47	0	0	1
Development (GDP pc c. US$)	362	19,106.63	19,721.08	11,631.35	318.01	10,7141.25
Default History (0-1)	362	0.35	0.48	0	0	1
Executive Ideology (0-1)	362	0.67	0.47	1	0	1
N	362					

Table 5: Standard & Poor's: descriptive statistics full sample

4.2. Regression Assumptions

In order to make valid and generalizable conclusions from the regression outcomes, several assumptions should be met. For the purpose of this study, it is analyzed if the data in the sample is normally distributed, the linearity of the relationships is examined, multicollinearity of the data is tested and it is assessed if the data met the requirements for homoscedasticity.

Normal distribution of the variables

The first assumption which will be tested is the normal distribution of the variables. For this research, the histograms with the frequency distributions of the dependent variables are graphically depicted in Figure 2-4.
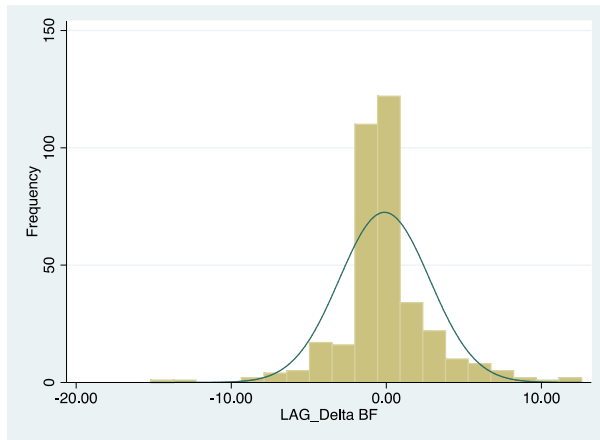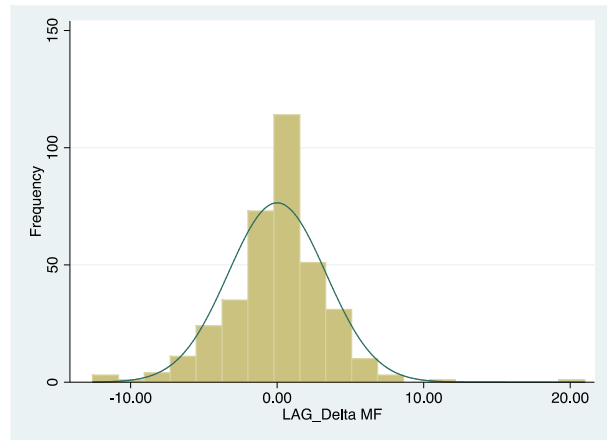
Figure 2: Distribution of delta_BF

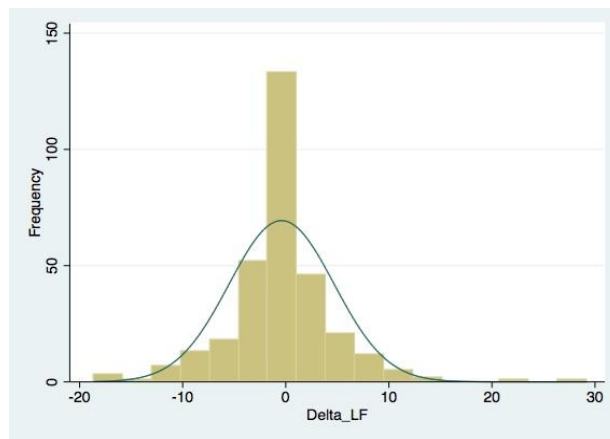*Figure 3: Distribution of delta_MF*

Figure 4: Distribution of delta_LF

When looking at these three figures, it can be said that the variables are approximately normally distributed, although there is no perfect normality. Graphically the distribution of the regression variables approximate the normal distribution line. The number of observations in the data set is sufficient to perform a regression estimate, from which the results are assumed to be asymptotically valid.

Also for the control variables the normal distribution is checked. The variable economic development which is measured by the GDP per capita in constant US is the only control variable to focus on regarding the distribution as the other variables are dummy variables. In Figure 5, the frequency distribution of GDP per capita is displayed which clearly shows that there is no normal distribution. In order to increase normality, the variable is transformed with power 0.25, shown in Figure 6. The transformation makes that the value is more normally distributed than the absolute

GDP per capita distribution, although the distribution is not perfect. The figure shows that the distribution approximates the normal distribution line.
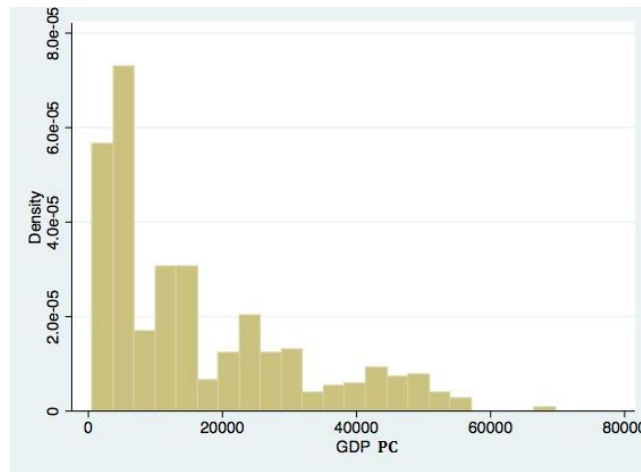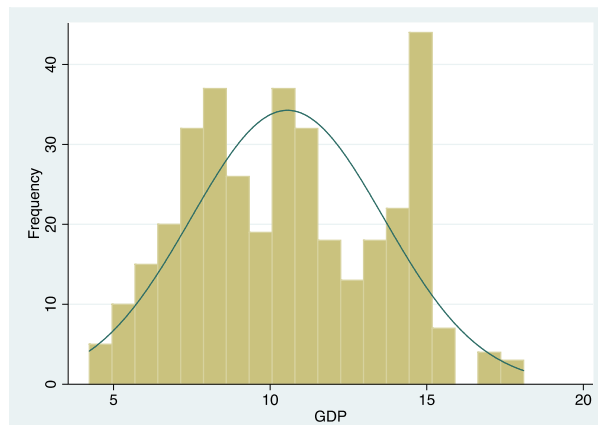

Figure 5: Distribution of GDP Per Capita

Figure 6: Distribution of transformed GDP pc pwr0.25

Multicollinearity

The second assumption which will be tested is the level of multicollinearity. Multicollinearity occurs when several independent variables in the model measure more or less the same. Multicollinearity appears when the correlation coefficient between two variables is close to perfect, indicating a correlation coefficient of close to 1. A correlation matrix shows the bivariate relations between variables, including the transformed variable for GDP per capita.

Table 5 shows Pearson's correlation matrix of the total sample of Standard & Poor's. The outcome shows that none of the variables is correlated in such a way with another that there is a presence of multicollinearity, indicating that the mutual relationships between the variables are not of danger for this research.

The relative high correlation between default history and the level of economic development. This value is equal to -0.411 and means that the level of development of a country is negatively correlated with the default history of a country indicating that countries which experienced a downgrade in recent history are more likely to be developing countries than developed countries.

	ΔBF	ΔLF	ΔMF	T_GDPpc	Down	DH	EI
ΔBF	1						
ΔLF	0.0268	1					
ΔMF	-0.111	0.0438	1				
T_GDPpc	-0.0388	-0.0061	-0.0254	1			
Down	-0.0131	0.0050	-0.193^{***}	-0.0296	1		
DH	-0.0852	-0.0601	-0.0743	-0.411^{***}	-0.0049	1	
EI	-0.0132	0.0025	0.0251	0.0492	0.0197	-0.160^{***}	1

Table 6: Pearson's Correlation Matrix
*Significance levels are *** p<0.01, ** p<0.05, * p<0.1.*

In order to be sure that there is no multicollinearity problem for the regression analysis, a collinearity test is performed. Accordingly, all VIF statistics are below the threshold value 10, so statistically there is no multicollinearity issue present amongst the regression variables.

Variable	VIF	Tolerance
Down	1.00	0.995
DH	1.23	0.810
EI	1.03	0.969
T_GDPpc	1.25	0.801

Table 7: Collinearity test statistics.

4.3 Results of the Regressions

This section highlights the OLS regression outcomes of the regression model developed in section 3.2. At first, some explanations about the model will be provided, then the assumptions about linearity and homoscedasticity are tested. Then the regression outcomes will be shown, with a different regression for each of the credit rating agencies.

Model Selection

Before proceeding to the regression analysis, it is important to select a suitable model and check the assumptions of linearity and homoscedasticity on that particular model. An overview of the presented models can be found in Table 7. The models (1), (4) and (7) represents the particular dependent variable with the independent variable of this research, downgrades, and the first control variable, economic development. Thereafter, each of the control variables is added to the model to inspect the fit of the control variables in the different models. Table 7 shows that regarding the change in Business Freedom, the third model is the most applicable, looking at the significant F. for ΔLF, model 5 is the most applicable, although not significant. For ΔMF, all F-values are significant, although model 9 has slightly the most explaining power as the coefficient of determination (R-squared) is 0.106

Dependent	ΔBF			ΔLF			ΔMF		
Independent	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Down	X	X	X	X	X	X	X	X	X
T_GDPpc	X	X	X	X	X	X	X	X	X
DH		X	X		X	X		X	X
EI			X			X			X
N	362	362	362	362	362	362	362	362	362
Adj. R-Squared	0.033	0.044	0.059	0.015	0.055	0.062	0.095	0.105	0.106
F	1.141	7.456	19.971	0.546	2.454	1.820	11.411	7.819	5.893
P(F)	0.242	0.008	0.000	0.571	0.059	0.132	0.000	0.000	0.000

Table 8: Composition of the Models

Linearity

The third assumption which should be met is the one of linearity. Linearity means that the relationship between all independent and dependent variables should be in some way linear, so that you can draw a line through the residuals in the scatter plot. Linearity of the relationship between each dependent variable and the other variables are shown in the scatter plots of residuals in Figures 7-9.

When looking at the three scatterplots in Figure 7-9, it can be concluded that linearity is present for all measures of the dependent variable. There is not a specific pattern visible in the residuals in the scatter plots, therefore a linear relationship is established. In Appendix 3, the scatter plots between the three dependent variables and the transformed variable of GDP per capita is shown for each of the three dependent variables. Linearity is also confirmed in these cases. It is not necessary to show the scatter plots of the bivariate relationships between the dummy variables and the dependent variables as they can only take the values of 0 and 1.
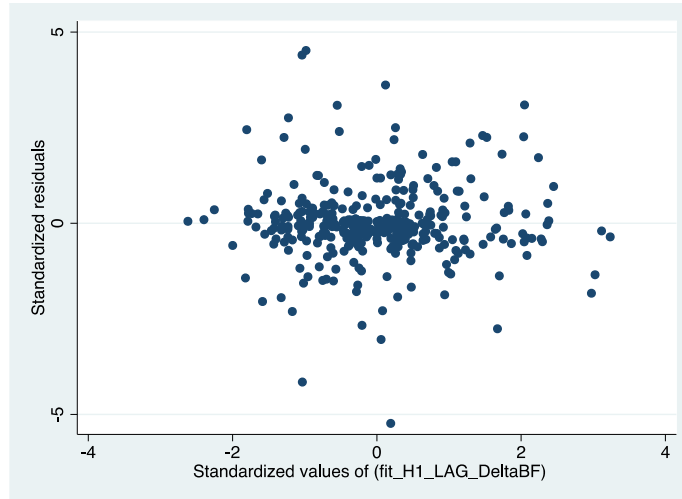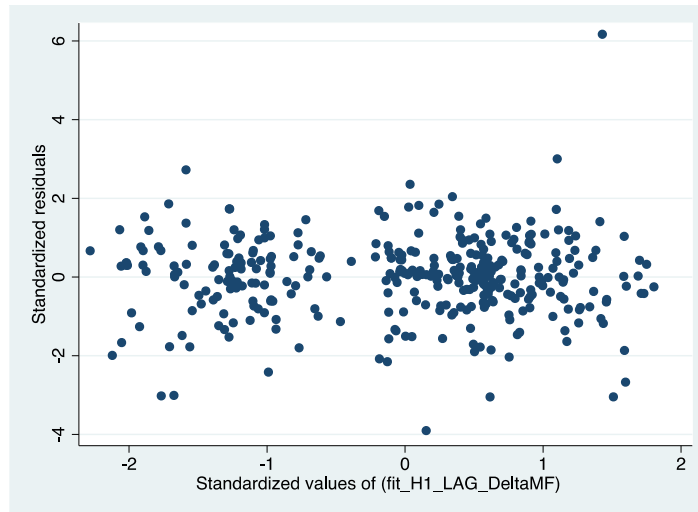
Figure 7: Scatter plot of Delta_BF

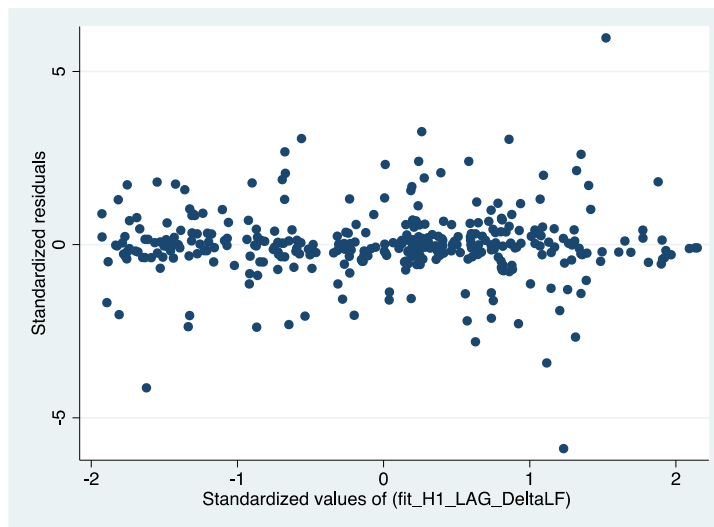*Figure 8: Scatter plot Delta_MF*

Figure 9: Scatter plot of Delta_LF

Homoscedasticity

The fourth and final assumption which should be met is to examine if there is homoscedasticity. The assumption about homoscedasticity means that the variance of the errors is the same across any level of the predictor values. When interpreting for homoscedasticity, it is important to look if all values are situated in a balanced way around the horizontal zero-line. If values are displayed in an unbalanced way or in a certain pattern, there is heteroscedasticity. In order to check the assumption of homoscedasticity it is possible to observe the scatterplots The scatterplots in Figures 7-9 show whether the variance of the residuals is constant. In all figures, the residuals do not display a clear pattern and the residuals are spread randomly. This shows that the models are homoscedastic. The assumption for homoscedasticity is met.

Regression Outcomes

In Table 8, the outcomes of the OLS regression are presented including all variables for each dependent variable. In Table 7, we have seen which models are most applicable for each of the dependent variables. These particular models are highlighted in yellow in the different columns. Model 5 shows the best fit of the model when Labor Freedom is the dependent variable. However, the F-statistic is not significant so no conclusions could be drawn on this variable.

Business Freedom

In the first three columns, the results of the regression are shown when taking the Business Freedom as the dependent variable. Model 1 and 2 do not prove to be significant, but model 3 is. The coefficient of determination (R-squared) shows the explanatory power of the models, which is low and ranges from 3.3% to 5.9%.

The independent variable downgrade shows a small negative coefficient on the change in the Business Freedom score, indicating that a downgrade results in a lower score, which is the opposite of what was expected. However, this coefficient does not prove to be significant so no conclusions could be drawn. In Model 3, we see a negative and significant coefficient between economic development and Business Freedom. This means that the higher the level of development of a country, the less changes in policy indicators are visible towards an adoption of neo-liberal policies. This is in line with what was expected according to the theory. Also in Model 3, a negative and significant coefficient is visible for the variable of executive ideology. The negative coefficient

indicates that a right-oriented executive in a country does not significantly contribute to more adoption of neo-liberal policies. This is the opposite of what was expected according to the theory.

Labor Freedom

In Models 4, 5 and 6, the results of the regression are shown when taking the Labor Freedom as the dependent variable. All models do not prove to be significant, although Model 5 is almost significant on the level of 0.05, with a coefficient of determination of 5.5%. In these three models, the positive coefficient between a downgrade and Labor Freedom is visible, in line with expectations, but the models and the coefficients are not significant.

In model 5, the coefficient of the relationship between default history and the indicators of respectively Labor Freedom are clearly positive and significant. This means that when a country experienced a default in recent history, the more likely it is that a country will adopt neo-liberal policies pretty quickly, which is in line with the expectations of this variable.

Monetary Freedom

Models 7, 8 and 9 show the results of the regression when taking the Monetary Freedom as dependent variable. All three models prove to be significant, with Model 9 as the one with the largest explanatory power of 10.6%. Remarkable is the significant and negative relationship between downgrades and Monetary Freedom in all three models. This indicates that when a downgrade occurs, the level of Monetary Freedom is negatively influenced which is not in line with the expectations as a tendency towards more neo-liberal policies was expected and thus a positive sign was expected.

Also opposed to what was expected is the significant and positive relationship between economic development and Monetary Freedom. This means that the more developed a country is, the more likely a country adopts neo-liberal policies after a downgrade as the positive sign indicates that the score rises.

Conclusion

Taking the results of the regression into account, it cannot be concluded that a downgrade imposed by Standard & Poor's results, the year after a downgrade, in a higher score of the analyzed components of the Economic Freedom Index. For Monetary Freedom, even a significant and negative score is detected, indicating a lower score following a downgrade.

The control variable economic development shows a negative relationship between the level of economic development and Business Freedom, which is in line with the expectations. The coefficient of economic development and Monetary Freedom is positive and significant, indicating that more developed countries see more changes in policies to keep the prices stable.

In several models, the expected relationship between default history and the different Freedoms is visible, namely positive. This means that when a country experienced a default in recent history, the more likely it is that a country will adopt neo-liberal policies rather quickly.

For the variable of executive ideology, also mixed results are found. In Model 3 a negative and significant coefficient is visible. The negative coefficient indicates that a right-oriented executive in a country does not significantly contribute to more adoption of neo-liberal policies. This is opposed to what was expected. Contrarily, a small positive coefficient is found in the model with Monetary Freedom as dependent. This implies that a center- or right-oriented executive wants to change policies towards neo-liberal standards more than left-wing executives.

Dependent variable:	(1) ΔBF	(2) ΔBF	(3) ΔBF	(4) ΔLF	(5) ΔLF	(6) ΔLF	(7) ΔMF	(8) ΔMF	(9) ΔMF
Independent variable									
Down	-0.012	-0.018	-0.050	0.246	0.221	0.243	-1.740***	-1.743***	-1.754***
Control Variable									
T_GDPpc	-0.701	-0.715*	-0.708*	-1.304	-1.426	-1.432	1.338*	1.314*	1.316*
Dummy variables									
DH		0.070***	0.272		5.993**	6.302**		1.180	1.108
Exe			-0.801*			0.571			0.210*
Constant	20.841*	21.310*	21.684*	34.308	38.331	38.063	-28.145*	-27.350*	-27.251*
Observations	362	362	362	362	362	362	362	362	362
Adj. R-squared	0.033	0.044	0.059	0.015	0.055	0.062	0.095	0.105	0.106
F-statistic	1.144	3.456	19.971	0.546	2.454	1.820	11.411	7.819	9.893
p(F)	0.242	0.020	0.000	0.571	0.059	0.132	0.000	0.000	0.000

Table 9: OLS Regression outcomes S&P
Significance levels are *** p<0.01, ** p<0.05, * p<0.1.

Chapter 5: Conclusion

In this fifth and final chapter, an answer to the central research question and sub-questions will be provided. The aim of this thesis is to contribute to the extant literature on the influence CRAs and their rating activities have on the direction of policies in countries. Many academics have tried to identify the determinants of sovereign ratings. Other academics have theoretically explained the CRAs' role in the international political and financial field and what their influence is on public policies. However, little empirical research has been conducted on this question. Additionally, this chapter also provides the main limitations of the conducted research will be presented followed by the final part of the study, which are the suggestions for future research.

The central research question of this study is:

What influence do credit rating agencies have on economic policies in countries?

In order to provide a clear answer to the central research question, several sub-questions were presented. The answers to the different sub-questions were provided in the previous chapters. A summary of these answers will be given below. The first sub-question was defined as:

1. *What are the main theories and what is the existing evidence on the influence of CRAs on economic policies?*

This sub-question has been answered extensively in chapter 2, which covers the literature review and the theoretical foundations of the relationship between CRAs and public policies. According to the theory, CRAs have a lot of power in the international financial markets. They serve as the gatekeepers for large amounts of credit upon which especially developing countries rely. Therefore, these CRAs put some invisible pressures on countries to adopt policies which act in accordance with the mental framework as applied by the CRAs, which is mainly a neo-liberal ideology. This ideology prescribes large amounts of individual and business freedom, a small government, deregulation of the economy et cetera. Therefore, it is suggested that following a downgrade, countries adopt more policies which are in accordance the neo-liberal framework so that a country's rating improves.

The second sub-question is:

2. *How can the different variables in the research be conceptualized and how can the impact of these variables be measured?*

The answer to this question is provided in chapter 3, in which the variables of the model were operationalized. In order to answer this question, the dependent variable changes in policies is measured by taking an index which involves many regulatory aspects of economic policies. The independent variable for this thesis is the occurrence of a downgrade. Also several other variables are added to the model in order to control for factors which possibly influence the process of changing policies.

The third and final sub-question is:

3. *What are the empirical findings of the regression analysis?*

This final sub-question has been answered in the previous chapter, which is chapter 4. This chapter dealt with the regression analysis and the regression assumptions of the data. The results show that there is no clear direct relationship between downgrades and changes in policies towards the neo-liberal ideology. The coefficients of the relationship of downgrades and Business Freedom show that there is mostly a small negative relationship between downgrades and policy changes, which is the opposite of what was expected, but often they do not prove to be significant. However, the variable of downgrade shows a negative and significant relationship with Monetary Freedom, indicating that following a downgrade the level of Monetary Freedom significantly declines, which is the opposite of what was expected. Moreover, a positive relationship is detected between downgrades and policies regarding labor regulations, which is the expected direction. However, the coefficient does not prove to be significant.

5.1 Discussion of Findings

The intent of this research has been to identify the influence CRAs have on changes in economic policies in countries. A vast amount of literature has been devoted to what the determinants of sovereign ratings are, as the rating agencies do not give full transparency on these activities. Also, both the academics and the rating agencies acknowledge that there are qualitative and subjective elements which are also taken into account in the rating process.

The main criticism on these rating activities is that CRAs employ these ratings to their benefits. Therefore, because of coercive pressures and the mental framework of rating orthodoxy, these rating agencies can put an invisible pressure on countries to adopt and implement policies which are in accordance with the views of CRAs and with what CRAs deem as good and solid policies. As these CRAs publish these ratings, sovereigns looking for credit are eager to implement those policies in order to get 'rewarded' and receive an upgrade. The case is that the CRAs are Anglo-American institutions and this mental framework clearly favors the Anglo-American neo-liberal ideology, i.e. liberalized controls of capital, less intervention from the government, governance models that highlight maximum value for shareholders or investors, disintermediated financial systems, more flexibility on the labor markets and more freedom in the business environment.

For the purpose of this research, downgrades from Standard & Poor's were analyzed along with the implications these downgrades have on economic freedom in general, namely monetary policies, policies which determine the freedom of entrepreneurs and policies regarding the regulations in the labor market. These changes in policies were operationalized on the basis of three components of the Economic Freedom Index. The content of these components is mentioned often in studies on CRAs' influence in the global political economy. Following the neoliberal mental framework, a downgrade can be seen as a penalty or incentive of a CRA towards a country in order to act in accordance with the neoliberal prescribed set of policies. Therefore, it is expected that a downgrade results in a higher degree of freedom in the year <u>after</u> a downgrade, represented by a higher score. It is expected that downgrades do not have immediate effects, but do have an effect on the short-term as rating frequencies are rather high.

The results of the regression for the sample of Standard & Poor's show that there is no robust evidence that downgrades do have such an effect on changes in policies, that more neoliberal policies will be implemented which strive for more individual freedom and freedom regarding business practices. The coefficients show that there is at most a small negative relationship between downgrades and the policy changes, which is the opposite of what was expected, but often they do not prove to be significant.

In the sample of the relationship between downgrades and the changes in monetary policies proves to be negative and significant. The Monetary Freedom variable consist of the weighted average

rate of inflation and a possible penalty when price controls exist. This could be explained by the phenomenon that, after a downgrade a country's borrowing costs rise, which could lead to shortly to a higher level of inflation. Moreover, this outcome demonstrates that countries in general see an increase in the level of inflation following a downgrade, which means that a country seems to have difficulties to implement policies to battle these reduce this rate.

Throughout the sample, in several models a clear relationship is visible between the default history of a country and the changes in policies. The coefficients in the model are positive, although not always significant. This implies that the variable, if a country has defaulted in recent history, has a positive effect on imposed changes in policies, which is in line with the expectations. The expectation regarding the direction of policies was that a country which experienced a default in the recent history would be eager to implement policies according to the neo-liberal framework, which would result in a higher score after a downgrade. This could be explained by the fact that countries, which defaulted in recent history, are more vulnerable to impose changes along the neo-liberal framework as they do not want to encounter the problems of a possible default again.

The outcomes show that in the case of Business Freedom, the higher the development level, the less changes in policies which are accounted with more individual freedom regarding entrepreneurial regulations. This is the opposite of what was expected as more developed countries in general already have more neo-liberal ideas and are less willing to radically change its type of policies. It was expected that developing countries would be more eager to change policies as the rating or a downgrade determines the access of a country in the financial markets. Developing countries looking for new credit are therefore expected to put everything into work to improve this single rating. However, the outcomes do not support this claim.

Moreover, the presence of a center- or right-wing executive shows mixed results in the regression. Both significant negative coefficients and significant positive coefficients are displayed in the results. Regarding regulations on starting and operating a business, as opposed to what was expected, a negative relation is demonstrated between the presence of a center- or right-wing executive in a country. This is remarkable as these executives would encourage policies according to the neo-liberal framework of more individual and entrepreneurial freedom. The positive

significant coefficient is shown in relation to Monetary Freedom, indicating that the presence of a center- or right-wing executive does significantly contribute to stable prices.

Taking these outcomes into account, it can be concluded that Soudis' (2015) results were confirmed. In his study, Soudis (2015) investigated two different hypotheses: he argued that there is no evidence that downgrades in a country is a significant predictor of policy reforms. In line with Soudis (2015), this research is not able to conclude that downgrades have an immediate effect on the selected types of policies and policymakers in the direction suggested by the literature. On the contrary, a downgrade would lead to significant rise in the level of inflation, indicating that a country has difficulties to implement policies to battle this inflation. This overall outcome could be explained by the fact that there are numerous other factors which determine whether a country adopts more neo-liberal policies or not. Another factor could be that it takes more time to adopt a new policy, so immediate effects are negligible.

Of course, CRAs are powerful organizations which surely have their ideas on what constitutes good and bad policies, and they are able to exercise these ideas on others. This research however, did not show a relationship between a downgrade and the implementation of policies which promotes the neoliberal framework towards more individual and business freedom.

5.2 Conclusion

To conclude, this research has been conducted in order to obtain a better understanding of the relationship between CRAs and the influence they have on public policies as there is little empirical research to date. The research consisted of a total of 117 observations with a downgrade and 245 observations without a downgrade from the largest credit rating agency Standard & Poor's. These cases were analyzed on a number of policy indicators in order to test the effect of a downgrade on changes in these indicators and whether these indicators move towards the expected direction. This expected direction comes from the neoliberal mental framework of rating orthodoxy and implies that CRAs want that sovereigns implement policies which are prescribed by this framework as they perceive these policies as solid.

The outcomes of the study show that there is no significant relation between a downgrade and policy indicators in the expected direction. Contrarily, a downgrade would significantly result in a

higher level of inflation the year after a downgrade. The policy implications of this research are rather negligible. Although CRAs are powerful actors and are somewhat able in some way to guide sovereigns in the direction of preference, the idea that CRAs are private actors of public policies and that they can impose penalties on sovereigns on a large scale should be treated more carefully. This is because there are many internal and external factors which determine a policy or a change in policy. CRAs are gatekeepers of large amounts of credits, and the ratings of creditworthiness of corporates and sovereigns is important as it represents the simplified symbol of a sovereign's ability and willingness to repay debts. However, this research showed that there is no such direct relation between changes in policies and downgrades, as opposed to what the literature suggested.

To conclude, evaluating the central research question of *what influence do credit rating agencies have on economic policies in countries?* It cannot be answered with absolute certainty. This is because policymaking and implementation of policies deals with a variety of internal and external factors and sovereign ratings are one of these factors. rating agencies certainly have power as their rating activities are simple symbols of complex products to assess the creditworthiness of a sovereign, along with the advantages or disadvantages a high or low rating brings. However, the research did not show a significant relation between a downgrade of a rating and changes in economic policies within countries towards the neo-liberal framework as suggested by the literature.

5.3 Limitations & Future Research

In line with all studies carried out by academics, this study also has to deal with several limitations to realize this report. However, these limitations could pave the path for other academics to conduct future research. The limitations are related to the time period and choice and operationalization of the variables.

As with all quantitative studies, an important part of the research is the choice of the variables. As I thought it was interesting to study the effect of downgrades on public policies, several assumptions had to be made. At first, the most important question was how would you operationalize changes in public policies. I did my absolute best to explain and justify my choices the best way possible, looking at what other researchers did or what rating agencies suggested.

However, I knew already that changes in policies are not easy to operationalize as there are many other internal and external forces which are taken into account when making or implementing policies.

The second limitation of the research deals with the time period. In order to be able to capture all available data, a time span of 10 years has been chosen, which has been chosen rather arbitrarily. However, what is of more concern is the time lag which has been put on the dependent variables. It is assumed that rating frequencies or outlooks happen quite often and that a downgrade does not have an immediate effect on policies. Therefore, a time lag of one year has been chosen, which leaves room for discussion, because it is difficult to attribute a change in policy indicators one-on-one to a downgrade. Also it is possible that implementing new regulations and policies takes several years, which means that the eventual change in policies is yet visible in a few years after a downgrade.

Suggestions for future research are also widely present as this is only the second time, a direct link between ratings, downgrades and its influence on public policies has been researched. There are many opportunities to conceptualize the matter of policies or changes in policies as it involves a broad spectrum of areas.
Another opportunity is to look at the level of ratings and the implications on public policies, rather than focusing on the downgrades. If focusing on the ratings, for instance differences could be detected in the policies for low rated countries and high rated countries over time when omitting the effect of downgrades.

Other opportunities for future research are related to methods of analysis. A possibility would be to conduct a longitudinal study on panel data by looking at certain points in time and addressing the differences between policies over time, rather than a cross-sectional analysis looking at the simple observations. Also there is room to conduct a case study. For instance, Hungary faced many downgrades in the last decade. A case study would be interesting, because it allows one to zoom in particular cases in order to analyze the causes and effects of the downgrades and which implications this had on the government in determining its policies.

Bibliography

Abdelal, R. (2007). Capital rules: The construction of global finance. Harvard University Press.

Afonso, A., Gomes, P. & Rother, P. (2011) 'Short-and Long-Run Determinants of Sovereign Debt Credit Ratings', *International Journal of Finance and Economics*, 16(1): 1-15.

Bannock, G., & Manser, W. (1989). Dictionary of Finance.

Bissoondoyal-Bheenick, E. (2004). An analysis of the determinants of sovereign ratings. Global Finance Journal, 15(3), 251-280.

Blackburn, R. (2008) 'The Subprime Crisis', New Left Review vol.50: 1-44.

Bozic, V., & Magazzino, C. (2013). Credit rating agencies: The importance of fundamentals in the assessment of sovereign ratings. Economic Analysis and Policy, 43(2), 157-176.

Bruner, Christopher M. & Abdelal, R. (2005) 'To Judge Leviathan: Sovereign Credit Ratings, National Law, and the World Economy', *Journal of Public Policy*, 25(2): 191-217.

Brooks, R., Faff, R.W., Hillier, D. & Hillier, J. (2004) 'The National Market Impact of Sovereign Rating Changes', *Journal of Banking and Finance*, 28(1): 233-250

Buttolp Johnson, J. & Reynolds, H.T. (2008). *Political Science Research Methods*. Washington DC: Congressional Quaterly

Bryman, A., & Bell, E. (2015). Business research methods. Oxford University Press, USA.

Cantor, R. & Packer, F. (1996). Determinants and impact of sovereign credit ratings. *Economic Policy Review,* Federal Reserve Bank of New York, vol.2, October.

Chiu, I. H. (2013). Regulatory Governance of Credit Rating Agencies in the EU: The Perils of Pursuing the Holy Grail of Rating Accuracy. *European Journal of Risk Regulation*, 209-226

Cleaver, T. (2007) Understanding the World Economy. London: Routledge

Ceri, C., Keefer P., & Scartascini C. (2016). Database of Political Institutions Codebook, 2015 Update (DPI2015).Inter-American Development Bank. N*ew tools in comparative political economy: The Database of Political Institutions*. 15:1, 165-176 (September), World Bank Economic Review.

Darbellay, A. (2013). Regulating credit rating agencies. Edward Elgar Publishing.

Datz, G. (2004) 'Reframing Development and Accountability: The Influence of Sovereign Credit Ratings on Policy Making in Developing Countries', *Third World Quarterly,* 25(2): 303-318.

Deutscher Bundestag. (2003). Transcript of a public hearing of the German Parliament's Finance Committee on 4 June 2003. Retrieved from: http://webarchiv.bundestag.de/archive/2005/0825/parlament/gremien15/a07/protokoll e/Protokoll_020.pdf (accessed on 27-11-2015)

Deeg, R. and O'Sullivan, M.A. (2009) 'The Political Economy of Global Finance Capital', World Politics, vol.61(4): 731-763

DiMaggio, P. & Powell, W.W. (1991). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *The new institutionalism in organizational analysis*, 63-82.

Elkhoury, M. (2009). Credit rating agencies and their potential impact on developing countries. In: *Compendium on debt sustainability and development,* 165-180.

European Commission (2016). Financial Assistance to Greece. Retrieved from: http://ec.europa.eu/economy_finance/assistance_eu_ms/greek_loan_facility/index_en.htm

European Commission (2016). Post-Programme Surveillance of Portugal. Retrieved from: http://ec.europa.eu/economy_finance/assistance_eu_ms/portugal/index_en.htm

European Commission (2016). Post-Programme Surveillance of Ireland. Retrieved from: http://ec.europa.eu/economy_finance/assistance_eu_ms/ireland/index_en.htm

Fitch Ratings (2016). Sovereign Rating Criteria. Master Criteria. Retrieved from: https://www.fitchratings.com/site/criteria/pfsov

Friedman, T.L. (1996). *The News Hour with Jim Lehrer: Interview with Thomas L. Friedman* (PBS television broadcast)

Frost, C. A. (2007). Credit rating agencies in capital markets: A review of research evidence on selected criticisms of the agencies. *Journal of Accounting, Auditing & Finance*, 22(3), 469-492. ISO 690

Gaillard, N. (2011). A century of sovereign ratings. Springer Science & Business Media.

Gavras, P. (2010). Regulatory abdication as public policy: government failure and the real conflicts of interest of credit rating agencies. *Southeast European and Black Sea Studies*, *10*(4), 475-488.

Gschwend, T. & Schimmelfennig, F. (2007). Chapter 1: Introduction: Designing research in political science – a dialogue between theory and data. In: Gschwend & Schimmelfennig (Ed.), Research design in Political Science.

Guler, I., Guillén, M. & Macpherson, J. (2002) 'Global competition, institutions and the diffusion of organizational practices. The international spread of ISO 9000 quality certificates', *Administrative Science Quarterly 47*: 207 – 33.

Hanusch, M. & Vaaler, P.M. (2013) 'Credit rating agencies and elections in emerging democracies: Guardians of fiscal discipline?', Economics Letters, 119(3): 251-254

Harvey, David. (2005) A brief history of neoliberalism, New York: Oxford University Press.

Hawley, A. H. (1968). Human Ecology. International Encyclopedia of Social Sciences. L. NY: Mancmillan.

Heritage Foundation (2016). The Index of Economic Freedom 2016.

Hill, P., Brooks, R., & Faff, R. (2010). Variations in sovereign credit quality assessments across rating agencies. Journal of Banking & Finance, 34(6), 1327-1343.

Hull, J., Predescu, M., & White, A. (2004). The relationship between credit default swap spreads, bond yields, and credit rating announcements. Journal of Banking & Finance, 28(11), 2789-2811.

Kanter, R. M. (1972). Commitment and community: Communes and utopias in sociological perspective (Vol. 36). Harvard University Press.

Kerwer, D. (2002) 'Rating Agencies: Setting a Standard for Global Financial Markets', *Economic Sociology-European Electronic Newsletter*, 3(3): 1-6.

Kiff, J., Nowak, S.B., Schumacher L. (2012) Are Rating Agencies Powerful? An Investigation into the Impact and Accuracy of Sovereign Ratings. *WP/12/23, International Monetary Fund.*

Kohlscheen, E. (2010). Domestic vs external sovereign debt servicing: an empirical analysis. International Journal of Finance & Economics, 15(1), 93-103.

Larson, M.S. (1977) The Rise of Professionalism: A Sociological Analysis. Berkeley: University of California Press.

Lehnert, M., Miller, B., & Wonka, A. (2007). Increasing the relevance of research questions: considerations on theoretical and social relevance in political science. *In: Research Design in Political Science* (pp. 21-38). Palgrave Macmillan UK.

Lewis-Beck, M. S., Bryman, A., & Liao, T. F. (2004). *The SAGE Encyclopedia of Social Science Research Methods*. Thousand Oaks: Sage Publications.

Mellios, C., & Paget-Blanc, E. (2006). Which factors determine sovereign credit ratings? The European Journal of Finance, 12(4), 361-377.

Moody's (2015). Rating Methodology. Sovereign Bond Ratings. Retrieved from: https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_186644

Olsen, C., & St George, D. M. M. (2004). Cross-sectional study design and data analysis. *College Entrance Examination Board.*

Osborne, J., & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. Practical assessment, research & evaluation, 8(2), 1-9.

The Quality of Government Institute (2016). Quality of Government Standard Dataset.

Partnoy, F. (1999). The Siskel and Ebert of financial markets: two thumbs down for the credit rating agencies. *Washington University Law Quarterly*, 77, 619-712.

Partnoy, F. (2009). Historical perspectives on the financial crisis: Ivar Krueger, the credit-rating agencies, and two theories about the function, and dysfunction, of markets. *Yale Journal on Regulation*, 26, 431.

Paudyn, B. (2013) 'Credit rating agencies and the sovereign debt crisis: Performing the politics of creditworthiness through risk and uncertainty', *Review of International Political Economy.* 1-31.

Princeton University (2008). Data and statistical Services. *Log transformations*

Reinhart, C. M. (2010). This time is different chartbook: country histories on debt, default, and financial crises (No. w15815). *National Bureau of Economic Research.*

Reinhart, C. M., & Rogoff, K. S. (2004). Serial default and the" paradox" of rich to poor capital flows (No. w10296). *National Bureau of Economic Research.*

Reurink, A. (2012) 'Credit Rating Agencies and The Politics of Creditworthiness. The pre-Crisis Evolution and post-Crisis Renegotiation of the Global Credit Rating Regime. *University of Amsterdam.*

Rom, M. C. (2009). The credit rating agencies and the subprime mess: Greedy, ignorant, and stressed? *Public Administration Review*, 69(4), 640-650.

Rosenau, J. N., & Czempiel, E. O. (Eds.). (1992). Governance without government: order and change in world politics (Vol. 20). Cambridge: Cambridge University Press.

Sinclair, T. J. (1994a). Passing judgement: credit rating processes as regulatory mechanisms of governance in the emerging world order. *Review of international political economy*, 1(1), 133-159.

Sinclair, T. J. (1994b). Between state and market: Hegemony and institutions of collective action under conditions of international capital mobility. *Policy sciences*, 27(4), 447-466.

Sinclair, T. J. (2005*) The new masters of capital: American bond rating agencies and the politics of creditworthiness*, New York: Cornell University Press.

Soudis, D. (2015) Credit Rating Agencies and the IPE: Not as influential as thought? *Review of International Political Economy*, 22:4, 813-837.

Spiegel (2012). Moody's Blues: Concern Spreads over Slow Pace of French Reform.

Standard & Poor's (2014). Criteria. Sovereign Rating Methodology. Retrieved from: https://www.standardandpoors.com/en_US/web/guest/article/-/view/type/HTML/id/1650754

Sylla, R. (2002). An historical primer on the business of credit rating. In Ratings, rating agencies and the global financial system (pp. 19-40). Springer US.

Taylor, M., & Singleton, S. (1993). The communal resource: Transaction costs and the solution of collective action problems. *Politics & Society*, 21(2), 195-214.

Utzig, S. (2010). The financial crisis and the regulation of credit rating agencies: A European banking perspective. *Asian Development Bank Institute. Working paper Series.*

United States Comptroller of the Currency (1936). Purchase of Investment Securities, and Further Defining the Term "Investment Securities". *Revised Statutes as Amended by the "Banking Act".*

Waters, Richard (1992). 'Moody's upgrades Argentina,' The Financial Times July 14: 21

White, H.C. (1985). 'Agency as control,' in John W. Pratt and Richard J. Zeckhauser*, Principals and Agents: The Structure of Business*. Boston: Harvard University Press

White, L.J. (2009). A brief history of credit rating agencies: How financial regulation entrenched this industry's role in the subprime mortgage debacle of 2007–2008. *Mercatus on Policy*, 59.

White, L. J. (2010). Markets: The credit rating agencies. *The Journal of Economic Perspectives*, *24*(2), 211-226.

White, L.J. (2013). Credit Rating Agencies: an overview. *Preparation for the Annual Review of Financial Economics.* 1-51. New York University

World Bank (2016). World Bank Open Data. Retrieved from: http://data.worldbank.org/

Appendix

Appendix 1: Explanation on several countries' data in the dataset

Several countries in the dataset did not encounter a default in the early years of the measured time period, but did encounter one later in this period. Therefore, these countries are awarded a 0 (no default) in the early years and a 1 (default) in the years after which the default or the large debt restructuring occurred. For all other countries, data was available according to the data from Kohlscheen (2010) and Reinhart (2010).

Greece: Since 2010, there has been a lot of speculation of a sovereign default of Greece. Now, in 2015, already three programs have been installed in order to prevent Greece from defaulting of its sovereign debts (European Commission, 2016).

Portugal: Portugal applied for bail-out programs in 2011 for three years consisting of a cumulated amount of around 80 billion euros in order to prevent a situation of insolvency in the country (European Commission, 2016)

Ireland: Just as Portugal, Ireland received in late 2010 financial assistance for three years, a total amount of around 85 billion euros in order to prevent a situation where it would be unable to pay its debts or interest payments. (European Commission, 2016).

**Appendix 2: Overview of countries in the sample of Standard & Poor's, 2004-2013**

	Country		*Country*		*Country*		*Country*
1	Albania	*23*	Dominican Republic	*45*	Kazakhstan	*67*	Portugal
2	Angola	*24*	Ecuador	*46*	Kenya	*68*	Romania
3	Argentina	*25*	Egypt	*47*	Latvia	*69*	Russia
4	Australia	*26*	Èstonia	*48*	Lebanon	*70*	Senegal
5	Austria	*27*	Fiji	*49*	Lithuania	*71*	Serbia
6	Bahamas	*28*	Finland	*50*	Luxembourg	*72*	Singapore
7	Barbados	*29*	France	*51*	Macedonia	*73*	Slovakia
8	Belarus	*30*	Georgia	*52*	Malta	*74*	Slovenia
9	Belgium	*31*	Germany	*53*	Mongolia	*75*	South Africa
10	Belize	*32*	Ghana	*54*	Montenegro	*76*	Spain
11	Bosnia & Herzegovina	*33*	Greece	*55*	Mozambique	*77*	Sri Lanka
12	Botswana	*34*	Guatemala	*56*	The Netherlands	*78*	Sweden
13	Brazil	*35*	Honduras	*57*	New Zealand	*79*	Trinidad & Tobago
14	Bulgaria	*36*	Hungary	*58*	Nigeria	*80*	Turkey

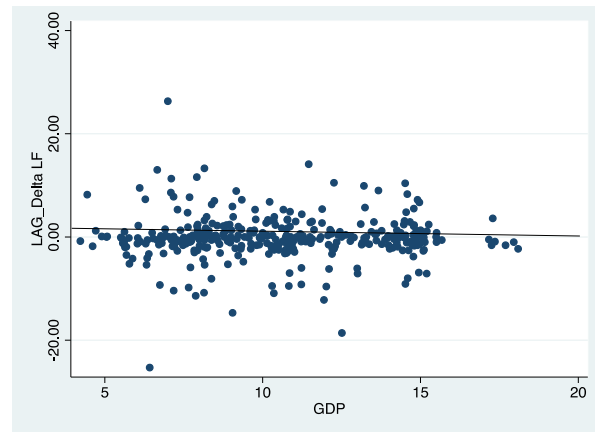| 15 | Canada | 37 | Iceland | 59 | Norway | 81 | Uganda |
16	Cape Verde	38	India	60	Oman	82	Ukraine
17	Chile	39	Ireland	61	Pakistan	83	United Kingdom
18	China	40	Israel	62	Papua New Guinea	84	United States
19	Costa Rica	41	Italy	63	Paraguay	85	Venezuela
20	Croatia	42	Jamaica	64	Peru	86	Vietnam
21	Cyprus	43	Japan	65	Philippines	87	Zambia
22	Denmark	44	Jordan	66	Poland		

Appendix 3: Bivariate relationships dependent variables and T_GDP_PC
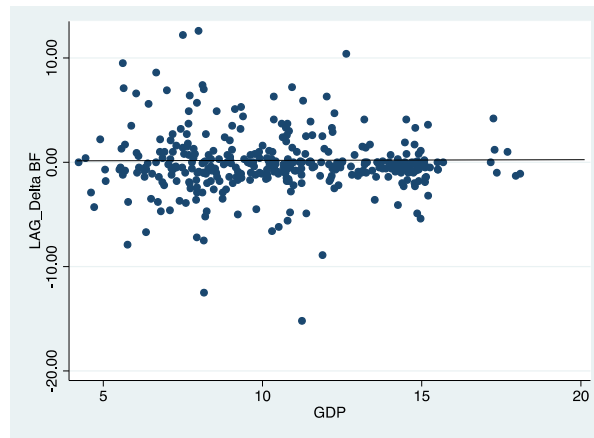
Scatter Plot T_GDP_pc and BF
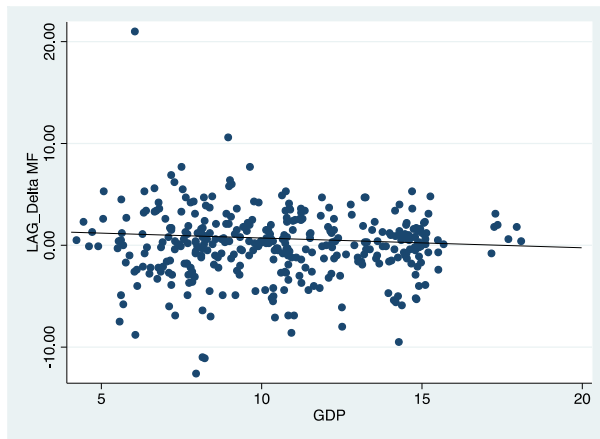
Scatter plot T_GDP_pc and MF

Scatter plot T_GDP_pc and LF