

On the origins and evolution of credit rating agencies

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Abstract

Credit rating agencies emerged in the beginning of the 20th century as an information provider about the creditworthiness of debt issuances. However, it was not until the 1970s that credit rating agencies obtained a significant status in financial markets. This paper explores the factors that contributed to the transformation of credit rating agencies into financial market authorities by taking into account the impact of financial regulation and monetary policy. Several factors led to a rise in the rating business: Accounting rules, monetary policy and capital adequacy frameworks favored a large increase in the debt securities market and pushed forward financial disintermediation. Likewise, securitization further substantiated rating activities. This paper argues that governments have not only created an income guarantee for credit rating agencies by giving them regulatory licenses, but that they were also the major drivers for the increase in rated debt over the last decades. As a result, they transformed independent financial service providers into the financial market authorities as we know them today. Based on these findings, this paper sketches a short reform proposal for the credit rating industry.

1 Introduction

The role of credit rating agencies (CRAs) in financial markets is widely debated in academia. These institutions provide information about the creditworthiness of debt issuers to potential investors by acquiring private and public information that is not available to the wide public. Credit ratings play an essential role in most capital markets, both in established as well as emerging ones. They positively affect the cost of borrowing and significantly ease the access to capital since investors trust credit ratings for their investment decisions and are obliged to use them for regulatory purposes. For this reason, debt issuers are willing to pay high rating fees in order to solicit a rating.

However, in recent history CRAs have been frequently criticized for publishing inaccurate credit ratings. Furthermore, their opaque rating methodology has been questioned by several stakeholders. Notorious examples concern for

instance countries such as Thailand or Indonesia which obtained investment-grade ratings just months before the Asian crisis of 1997-1998 hit its peak. Likewise, companies such as WorldCom, Parmalat or Enron were considered creditworthy just weeks before they eventually declared bankruptcy.

The outburst of the most recent financial crises even further exacerbated the debates about the role of credit rating agencies in financial markets. Icelandic banks were able to satisfy their desire for asset growth in foreign markets due to their credit ratings before the whole banking system collapsed. CRAs played a major role in the subprime crisis in the USA by giving artificially high credit ratings to very risky structured finance instruments. European policy-makers blamed CRAs for their role in the current sovereign debt crisis.

As Boettke and Fink (2011, 1) point out, “institutions structure incentives” and “the institutional environment thus determines if people engage in productive, unproductive, or destructive behavior”. The central concern of this paper is to explore the question of how independent financial service providers could become a key player of this institutional environment in the first place. And why do credit ratings continue to be extensively used for regulatory purposes, despite apparent failures of CRAs to properly assess the creditworthiness of diverse financial instruments?

Most academic writings such as Partnoy (1999, 2001, 2006), Bruner and Abdelal (2005) or White (2002, 2010a,b) focus to a large extent on the use of credit ratings in all sorts of financial regulations to explain the growth of this industry. While it is true that their regulatory use is the ultimate link of all the explaining factors, it does not give the full picture of the problem. The other necessary condition is the substantial development of debt securities which require a credit rating.

This paper is structured as follows. Section 2 gives a brief overview about the current literature on this topic. Section 3 examines the origins of CRAs. Section 4 describes the potential mechanisms that triggered the growth of the credit rating industry. Section 5 sketches a short reform proposal based on these findings and section 6 concludes.

2 Related Literature

Lagner and Knyphausen-Aufsess (2012) provide a recent overview of the academic literature with regard to CRAs. There are over 400 articles (and still more to come) that deal with several related topics, but basically five major themes can be identified, among which the first four categories account for approximately 95% of the literature and are mostly empirically motivated.

This article belongs to the literature about the regulation of CRAs and the regulatory use of credit ratings. However, as Lagner and Knyphausen-Aufsess (2012, 6) illustrates, this theme only accounted for 4-5 % of the academic literature about CRAs except for the period between 1976-1980, where 22% of the scientific articles were dedicated to this research topic.

The literature on the growth of the credit rating industry is even more limited

and mostly focuses on the role of regulation as documented by the numerous contributions of lawyers. Most prominently, Frank Partnoy from the University of San Diego School of Law insists on the rating-based regulation as the major driver of the credit rating industry, proposes CDS swaps as alternatives to credit ratings and suggests different ways to increase the liability of CRAs (Partnoy, 1999, 2001, 2006). Rousseau (2006), Bruner and Abdelal (2005) and White (2002, 2010a,b) are other prominent examples of authors that outline the over-reliance on credit ratings in regulations. Furthermore, they sketch regulatory reform proposals to improve the quality of credit ratings as well as the conduct of industry.

Political scientists also investigated the process of how CRAs became financial market authorities. Kerwer (2001, 2005) analyzes the role of CRAs as standard setters for creditworthiness and the role of rating-based regulation. He proposes to limit the scope of CRAs operations. The most prominent work is done by Sinclair (2000, 2001, 2003). His book about “The New Masters of Capital” Sinclair (2008) puts the findings of his previous work together and provides a full analysis about the growth of the credit rating industry. He identifies the regulation-based growth as a major driver, but also focuses on the more laxist international capital regulations which enforced the financial disintermediation in an international context. Furthermore, he insists on the non-neutral biased judgments by CRAs which are shaped into authoritative objective evaluations due to their status. In this manner, they actively determine the functioning and structure of the very issuers they rate. The author not only focuses on the important role of regulation for the growth of the credit rating industry, but also on the changes in global finance due to the decentralized nature of capital allocation.

However, these writings do not fully explain the role of monetary policy and financial regulation for the growth of the credit rating industry. The regulatory use of credit ratings is a necessary condition to explain this phenomenon, but it does not provide an analysis of why the financial markets and governments readily accepted their ascent to quasi-regulators in today’s financial markets until recently.

3 Origins of Credit Rating Agencies

Various institutions already provided extensive credit reports and some information about the creditworthiness in the 18th and 19th century. Similarly, the bond market already existed for over three centuries (Sylla, 2002) before John Moody first introduced bond ratings in 1909. Cantor and Packer (1994) identify mercantile rating agencies as the precursors of the bond rating agencies as we know them nowadays. They further argue that after the financial crisis in 1837, a certain need for information about the merchant’s ability to pay back their financial debts became more urgent. Louis Tappan first discovered this profit opportunity and created the first mercantile rating agency in 1841 by selling the desired information privately to investors. New York as the main financial

center was designated for its location. As Sylla (2002) points out, Richard Dun eventually acquired this agency in the following years and issued one of the first rating guides. At the same time, a similar business was created by John Bradstreet in 1849. Both companies merged into Dun and Bradstreet in 1933 before getting incorporated into Moody's Investors Service in 1962.

It was not before 1860 that Henry Varnum Poor published his first edition of the History of Railroads and Canals of the United States (Langohr and Langohr, 2006). Unlike mercantile rating agencies, he processed the collected data about the issuers and published them in a publicly available ratings book. Back then, reports could not be easily copied and distributed to other people at low cost. This business appeared to be lucrative and other companies were eager to get a share of the pie. The Standard Statistics Bureau was established in 1906 to provide public financial data to a large base of investors before eventually being consolidated into Standard & Poor's in 1941.¹ Although, mercantile rating agencies and rating publishers such as Poor and Standard provided reports similar to credit ratings as we know them today, it was John Moody who introduced first alphanumeric ratings in 1909.

Moody already specialized in the evaluation of industrial securities several years before, but he had to undergo the failure of his company during the stock market crash in 1907 before coming back to the rating business with an innovative rating methodology two years later. The ingenuity of his first volume of "Moody's Analysis of Railroad Investments" stemmed from his original way of analyzing railroad securities by summarizing them with a single letter grade. Investors were not always eager to read collected data or study in-depth analyses of the creditworthiness of outstanding securities, thus simple rating symbols came like a treat. Moody's extended its portfolio of rated securities to industrial corporations in 1913 and municipal bonds in 1914. The expansions reached its peak when Moody's was basically issuing a rating for every traded security by 1924. In the same year, a third major competitor entered the field of bond ratings, namely the Fitch Publishing Company (Partnoy, 2006). It took another 8 years for Duff & Phelps to enter the market, but they quickly decided to specialize in public utility companies, and were acquired by Fitch as an attempt to break the duopoly of Moody's and S & P.

By 1941 there were basically three major rating agencies operating in the industry before Duff & Phelps decided to enter a broader market in 1982.² The competitive structure of the credit rating industry will be analyzed in more detail later on, but it should be noted that the industry was already very concentrated in the first half of 20th century.

Rise and fall of CRAs Figure 1 represents the annual default rates for speculative-grade bonds from 1920 to 2011. This gives a fairly good picture of the various phases of the activities of CRAs. Three stages can be identified.

¹Standard & Poor's was acquired by McGraw-Hill companies in 1966. It is still the same configuration today.

²Actually, McCarthy, Crisanti and Maffer was founded a few years before ,in 1975, and was eventually acquired by Duff & Phelps in 1991 (Cantor and Packer, 1994).

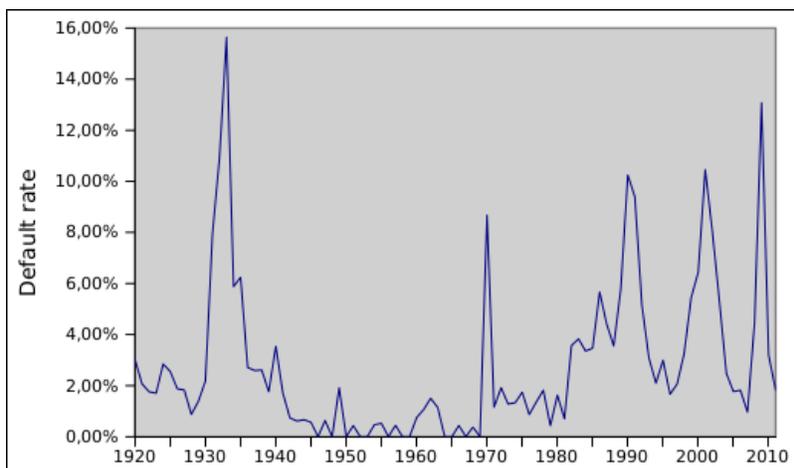


Figure 1: Annual Default Rates of Speculative-Grade Bonds (1920-2011) - Source: Corporate Default and Recovery Rates (1920-2011) by Moody's, Exhibit 6

Default rates were extremely high during the 1930s leading to an increase in demand for the rating services. After World War II, CRAs went through a period of drought lasting almost 30 years. Credit rating services were revived again from the 1970s to the beginning of the 21st century. The credit rating industry especially benefited from the end of the 1990s onwards as the the Basel framework consecrated their status and structured finance found its way to Wall Street.

From 1909 to World War I The first half of the 20th century stood for a flourishing period for the business of credit ratings. From 1870 to 1914, there was a classical international gold standard in place (Eichengreen and Flandreau, 1997). Each national currency was denominated according to a certain weight of gold. The dollar was for instance 1/20 of a gold ounce and a pound sterling was around 1/4 of a gold ounce and exchange were fixed accordingly. The international gold standard put a natural barrier on the inflation and the creation of government debt as gold provisions could not be increased artificially compared to a fiat money standard. If a country inflates, the national price level increases and imports become relatively cheaper than domestic goods. The resulting trade deficit needs to be paid by a certain amount of gold. If the country wants to avoid a loss of its entire gold reserves either through its outflow or redemption by foreigners, it needs to contract its money supply, raise its interest rate or obtain new credits from abroad (Rothbard, 2010). The classical gold standard was a fractional gold standard and banks did not hold 100 percent reserves. As Reinhart, Kirkegaard, and Sbrancia (2011) point out “Liberal capital market regulations and international capital mobility had their heyday under the gold

standard prior to World War I”.

This was beneficial for the business of CRAs since it helped to develop the corporate bond market. However, credit ratings were not used for regulatory purposes at that time.

World War I, Interwar and World War II European countries participating in WWI suspended the redemption into gold in order to raise more funds for the financing of the war through inflation, leading to a monetary chaos with freely-fluctuating exchange rates and fiat currencies (Rothbard, 2010). In the interwar phase, some countries returned to the gold standard, but redemption was only possible in form of gold bullions, and gold coins disappeared from the landscape. However, the 1930s witnessed again the surge of fluctuating fiat currencies which benefited the business of CRAs, however for different reasons. Gold reserves were centralized and redemption was reserved to foreign governments and central banks. By 1924 nearly the whole bond market was covered by Moody’s, and S & P’s attained the same level of coverage by 1941. In particular, the 1930s stimulated the credit rating industry as issuers and holders of securities went through unstable times. Many debt securities defaulted, reimbursements were more than uncertain and the number of traded financial products reached new levels. It was increasingly more difficult to figure out for investors what products to choose. Information asymmetries between issuers and investors were significantly stronger in these days, favoring the services of CRAs. They built up a good reputation for the quality of their judgment and investors consulted with them as the primary source of information. Similarly, the Office of the Comptroller of the Currency integrated CRAs into financial regulation for the first time in 1931 (Cantor and Packer, 1994). It was argued that all potential investors should have access to the same information as bankers (Sylla, 2002). A minimum rating of BBB or better by at least one credit rating agency was required for a bond to be considered at book value in bank holdings. Lower rated bonds had to be marked-to-market by banks. In 1936, the regulation became even stricter requiring minimum BBB ratings by at least two CRAs (Cantor and Packer, 1994). Similarly, regulators in the insurance business relied on the use of credit ratings for capital requirement purposes. CRAs now entered on a large scale the business certifying the creditworthiness of bond issuers which had traditionally been in the hands of investment banks. As Sylla (2002) points out, J.P Morgan himself complained already in 1913 that “all business soon would have to be done with glass pockets”. Naturally, the valuable financial information offered by investment banks was decreased substantially as CRAs provided credit ratings at a much lower cost to the public. Traders and professional investors started to integrate credit ratings in their evaluation tools as they were observing the impact of bond ratings on the prices of securities. All things considered, one might expect a steady increase of the influence of CRAs. However, international capital flows were almost nonexistent after 1945 and CRAs were not operating on an international scale.

3.1 Period of austerity from 1945 until the 1970s

As a response to the monetary chaos during the war periods, an international conference at Bretton Woods was organized with the aim of conceiving a new international monetary order (Eichengreen, 2004, 2). The dollar became the key currency and was redeemable in gold for foreign governments and central banks. Private citizens were not allowed to redeem their dollars. Each currency had a fixed relationship with the dollar and consequently with gold. These developments were not favorable for the business of credit ratings. Bond defaults decreased enormously and bond volatility was very low. CRAs had still not obtained the regulatory status which they would ultimately obtain in 1975 so that a low number of defaults were not good news for their business. However, this situation changed in the beginning of the 1970s.

As Eichengreen (2004, 11) points out, “Its status (of the United States) as the reserve-currency country evidently allowed the United States to live beyond its means” and “Charles de Gaulle and many of his countrymen found this objectionable”. At some point, France demanded a more contractionary U.S. monetary policy to continue participating in the gold pool necessary for the functioning of Bretton Woods (Eichengreen, 2004, 18). As the US failed to comply with the demands, France withdrew and the pool collapsed. The following “Gentlemen’s Agreement” in 1968 did not prove to be viable as an alternative. European governments began more and more to redeem their dollars into gold. Ultimately, President Richard Nixon decided in 1971 to totally go off the gold standard as political and economic pressures did not suffice to stop European central banks to redeem their piles of dollar reserves.

3.2 Period of significant increase from 1970 to today

The number of rated corporate issuers increases steadily from 1970 onwards as figure 2 illustrates. Likewise, as said before, only a few analysts were working for S & P by 1970, rising to around 30 analysts in 1980 and reaching an impressive number of 800 analysts by 1995 (Partnoy, 2006). Moody’s tripled its staff numbers from about 2.000 to 6.000 from 2004 to 2012.³ Likewise, Fitch Ratings tripled its number of employees between 1998 and 2007⁴. What were the reasons for this substantial increase of the ratings business from 1970 onwards?

Two of the necessary prerequisites for the growth in the credit rating industry occurred in this very decade. Firstly, a decisive change of the business model took place in 1970. After the scandal of Penn Central which defaulted on its commercial papers, CRAs came to the conclusion that public information may not be sufficient to correctly evaluate debt issuers (Langohr and Langohr, 2006). As the cost of copying and redistributing rating reports was getting less and less significant, it was a welcoming opportunity to introduce an issuer-pay model. Secondly, the SEC introduced the designation of “nationally recognized statistical rating organizations” (NRSRO) in 1975. This status was required

³Annual reports by Moody’s, author’s calculations.

⁴Annual reports Fimalac, author’s calculations

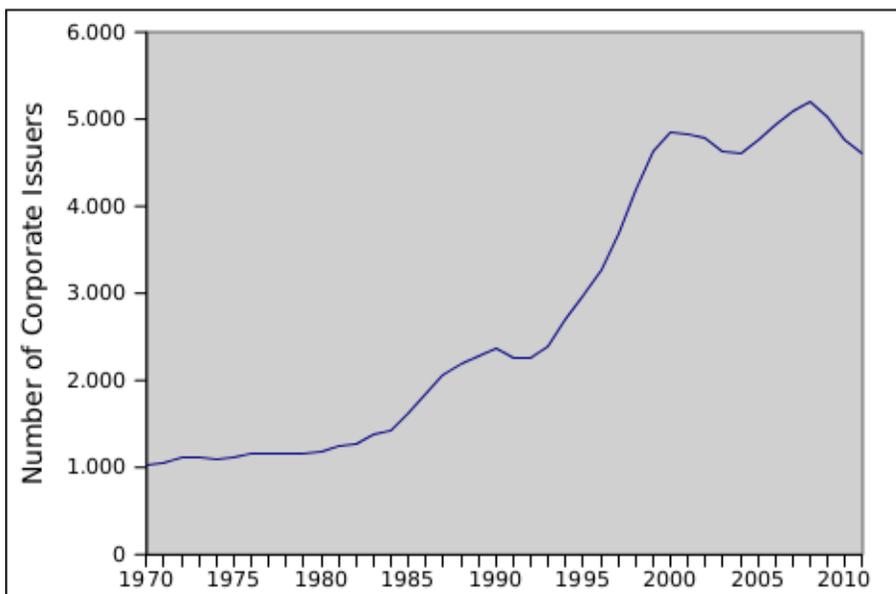


Figure 2: Number of corporate issuers (1970-2011) - Source: Corporate Default and Recovery Rates (1920-2011) by Moody's, Exhibit 41

for a bulk of regulations to minimize the exposure to risky securities. At the beginning, only the three big players, S & P, Moody's and Fitch benefited from this privilege. The influence and consequences for the industry were significant as many debt issuers were obliged to obtain a rating (or even two) in order fulfill the criteria for many regulations.⁵ A further consecration followed when CRAs were integrated in the capital adequacy framework of Basel II (and still in Basel III). The international banking sector would outsource its own risk evaluation to CRAs and determine their capital requirements in accordance with them. Similarly, the introduction of the European Monetary Union incentivized commercial banks to use government bonds with a certain rating as collateral for new money. As a consequence, now CRAs actually not only benefited from periods of economic instability, but also from periods of high debt issuance.

4 Increase in rated debt

Several theories have been put forward to analyze the growth of the financial sector in the recent decades:

1. Financialization and deregulation

Krippner (2005, 2) defines financialization as a "pattern of accumulation in

⁵Chapter 5 deals with regulatory use of credit ratings in more detail

which profit making occurs increasingly through financial channels rather than through trade and commodity production.” Stockhammer (2004) argues that this phenomenon had been made possible by several measures to deregulate the financial sector and to liberalize international capital flows since the breakdown of Bretton Woods at the beginning of the 1970s. Authors such as Stiglitz (2010) and Aglietta (2008) also identify the liberalization of the financial environment in the 1980s as the major drivers for the growth of this sector. In particular, the deregulation created the “shadow banking system”, i.e. financial institutions other than commercial banks. This comprises investment banks such as Bear Stearns, mortgage specialists such as Countrywide or structured investment vehicles. While it is true that the deregulation contributed to the increase in international capital flows, it must be pointed out that many entities of the shadow banking sector were actually regulated. Investment banks were regulated by the Basel accords such as commercial banks. Mortgage specialists were regulated as savings and loans institutions. However, these institutions were effectively less regulated and derivatives such as credit default swaps (CDS) were unregulated, but used for regulatory purposes.

2. Compensation practices of the banking sector

Authors such as Stiglitz (2010) or Posner (2009) argue that bankers took excessive risk and pursued balance-sheet increasing activities because they were encouraged by their compensation packages. While this might account for some of the overleveraging behavior within the financial sector, it does not really explain the increase in the volume of debt instruments. If resources are limited by the available amount of savings, bank executives have to rival with other competitors and can only take risky bets to a certain extent.

3. Irrational exuberance and animal spirits

Shiller (2005); Kindleberger and Aliber (2011); Akerlof and Shiller (2009) argue that asset prices were driven up by euphoria and enthusiasm which are not supported by fundamentals. In hindsight, investors and bankers should have been able to predict the effects. While overconfident market participants might explain why funds were channeled into certain markets such as the housing sector in the recent crisis or the technology sector during the dotcom crisis, it cannot fully explain the steady increase in the financial sector. Again, resources are limited by the available funds of savers so that “irrational exuberance” can only persist to a certain extent.

These factors certainly contributed to the increase in the financial sector and an overleveraged banking sector. Likewise, financial regulation incentivized banks to further decrease their equity and to engage into regulatory arbitrage by investing into rated debt securities. However, they do not explain the unsustainable rise in rated debt securities.

Ultimately, monetary policy by the main central banks provided the necessary conditions for the substantial increase in the balance sheets of banks. Regulations channeled funds into the banking sector and into the market for government debt, but monetary policy and credit expansion provided the necessary supply for the unsustainable growth. In the absence of these policies, the banking sector, the mortgage sector or the government simply have to rival with all the other market players for the funds that are made available by savers.

4.1 Financial regulation and growth in the financial Sector

Regulations weaken the incentives for actors in financial markets to constrain risky behavior. Market mechanisms which limit the risk-taking of investors by letting them bear the full consequences of their actions are replaced by regulatory authorities. Likewise, competition among banks assured that equity capital and liquidity reserves were high. The safety net consisting of deposit insurance, bailout guarantees and investor protection increased the incentives for banks to engage into balance sheet increasing activities. As a consequence, the need for credit ratings increased significantly as they are legally required for most debt issues and helped to channel funds to certain securities via their evaluations.

4.1.1 Accounting Rules

A CDS is a contract based on the performance of an asset or a portfolio of assets. For instance, buyer X purchases a CDS from a specialized company Y on a security Z. If security Z now suffers a credit related event which has been predefined in the contract, such as obtaining a credit downgrade or a default, then the underwriter Y has to pay a predefined sum to buyer X. CDS are not really insurance contracts as defaults do not belong to events that can be categorized under class probability. Furthermore, it should be pointed out that CDS contracts are over-the-counter products and it is actually not necessary to own the product in order to buy a CDS. Under IFRS rules, the exposure to risky debt can be removed by buying matching protection in form of a CDS contract from another company. These rules assume that the default risk of the CDS subject and the default risk of the counterparty are uncorrelated. Banks are incentivized to carry out as many transactions as possible, since the difference between premium they receive from potential investors and the premium they pay to the CDS insurance company is per definitionem positive (otherwise they would not engage into this trade in the first place). When banks issue loans without CDS protection, profit recognition only appears in the books when the borrower actually carries out debt payments. By contrast, uncertain future cashflows of the loans are recognized on the day the CDS is written. Accounting rules contributed to the unsoundness of the banking sector by creating incentives to transform as much as possible from their existing loan portfolios into derivative structures. This has massively occurred beginning with the end of the 1990s (Kerr, 2011).

4.1.2 Capital Adequacy Requirements

Many central banks and regulators have already imposed minimum requirements on a national level, but the collapse in 1974 of the Bankhaus Herstatt in Germany and of the Franklin National Bank in the US gave birth to the Basel Committee on Banking Supervision (BIS, 2013). One of the priorities of the committee was to address international capital regulation to guarantee that international financial institutions were subject to some common degree of capital requirements. The efforts for harmonizing bank supervision eventually led to the creation of Basel I, Basel II and Basel III.

Basel I The original intention of the Basel I framework was to guarantee the soundness of the global banking system by ensuring that banks do have sufficient capital cushions. The minimum level of capital was determined at a rate of 8%, i.e. the value of the bank's capital had to amount to at least 8% of the value of the bank's risk-weighted assets.

The definition of bank capital comprised two components: Tier 1 capital and Tier 2 capital. Tier 1 capital consists of items that have the greatest ability to absorb asset losses in case of bankruptcy. This corresponds to capital from ownership in the bank such as common equity or retained earnings. Tier 2 capital corresponds to items such as subordinated debt which has to be paid back after all creditors, but is still less reliable than equity, thus Tier 2 capital also concerned debt. This oversimplified framework could necessarily not account for the full variety of risk sensitivity among assets. A commercial loan from a very healthy company was considered as being as risky as one which was given to a company near bankruptcy. Sovereign debt with high premia from Greece as an OECD member accounted for zero risk just as German sovereign debt.

Consequently, banks and other financial institutions engaged into regulatory arbitrage (Jones, 2000). There are two ways to do this. Firstly, it is more profitable to own assets with the same risk-weight that yield higher premia. As outlined above, Greek government debt is treated in the same manner as a German bond, but it is far more profitable to own the former one. In the second place, it is more profitable to own assets with similar risk that result in much lower regulatory capital requirements. For instance, if commercial lending is as risky as a mortgage-backed loan, there is no doubt that a commercial bank opts for the latter one.

Basel II The oversimplification of risk classes led to Basel II in 2004. However, the modifications did not concern the principle of capital adequacy requirements as such. The required capital ratio was still equal to 8% of the bank's risk-weighted assets. Banks were incentivized to hold less liquid assets and had to rely on short-term financing (Pollin, 2013, 3). Basel II introduced the possible use of three different approaches. The Standardized Approach, which is similar to that in Basel I, increased the risk weights to 6 classes. The standardized approach under Basel II has not substantially reduced the opportunities of regulatory arbitrage. While it is true that there is now a further distinction

among assets of the same category, e.g. sovereign debt from an OECD country, it does not solve the problem of arbitrage. An AAA rated security normally yields a lower premium than an AA- bond, but the risk-weight is the same. Likewise, securitized assets were inherently riskier and yielded higher premia than sovereign or corporate bonds with similar credit ratings⁶. Furthermore, there is no incentive to solicit a rating at a credit level which is lower than BBB as it has the same interest for capital requirement reasons than BB+ to B- rated securities or even a higher one for rating below B-.

Likewise, Basel II explicitly acknowledges the role of credit derivatives such as CDS. The reduction of the capital requirements depends on the credit rating of the seller of the instrument and the risk-weighted assets are adjusted accordingly. Thus, Basel incentivized the use of CDS as a further means of regulatory arbitrage and actually enforced this problem.

Basel III Basically, Basel III differs from Basel II in that the required capital ratio has been increased, but the main issues have not been addressed again. Hellwig (2010, 11) points out that “prior to the crisis, there had been no consideration of the paradox that the buffer function of regulatory capital is limited because this capital is needed to satisfy the regulator.” As a consequence, a lowly capitalized bank cannot use its capital buffers to absorb its losses without falling below the legal minimum by the regulator. If it is 6 %, 8% or 13% does not significantly change the issue at hand. If there were no prudential regulations, banks could theoretically lower their equity far below the legal limit to cover their losses.

Whatever the name of the Basel framework, they share some common flaws. As it is the case in general with financial regulation that applies to a large number of market participants, it obliges all banks to follow similar asset management strategies. As Pollin (2013, 14) points out, the more banks are similar and develop similar activities, the more systemic risk is developed and diverts the attention away from looking at actual bank risks to compliance with regulatory guidelines. The possibilities of regulatory arbitrage incentivized banks to engage into riskier business as assets with higher profit opportunities, thus higher risks, are preferred over low yield assets that yield the same risk-weight for capital ratios. Regulatory arbitrage completely undermines regulatory discipline which has been originally designed to constrain systemic risk within the banking system.

However, it is technically impossible to completely eliminate regulatory arbitrage opportunities through capital adequacy guidelines as necessary information to find an optimal solution cannot be acquired in a world of constant change (Hayek, 1975). Prudence must be an aim that banks pursue for their own self-interest, otherwise capital adequacy cannot be established. The traditional business of loans becomes completely unattractive under the Basel framework and strengthens the tendency of the banking sector to specialize in traded debt securities.

⁶The issue of securitization is developed in chapter 4.

4.1.3 The Federal Reserve Bank and the Use of CDS

Accounting rules give incentives to use CDS for reasons of profit recognition and provide incentives to further decrease the traditional loan business of banks. Furthermore, the use of CDS is implicitly encouraged in the Basel framework for reasons of regulatory arbitrage. However, it is also important to give some explanations about further reasons for their use.

One major reason for the surge of CDS was the decision by the Federal Reserve Bank to let banks use those swaps to reduce capital reserves (Levine, 2012). As it is the case within the Basel framework, the counterparty risk was summarized by the credit rating of the seller of the CDS. To use a well-known example, the American International Group (AIG) had an AAA rating from the major CRAs. Thus as a consequence, if a financial institution bought a CDS from AIG e.g. for an asset-backed security, this very asset was considered as being risk-weighted as AAA in the the determination of capital ratios. Levine (2012) points to an example that has been outlined in (Tett, 2010, 64), where “banks with a typical portfolio of \$10 billion of commercial loans could reduce its capital reserves against these assets from about \$800 million to under \$200 million by purchasing CDSs for a small fee”(Levine, 2012, 8). National banks in the USA started to use CDS by 1996 (OCC, 1996) which corresponds to the year, when the Fed allowed banks to use credit derivatives to reduce regulatory capital. OCC (1996) estimated the notional value of CDS to be about some tens of billions of dollars. By 2003, it was equal to 3,8 trillion dollars. From 2004 (which is the official year of the introduction Basel II even though it was not fully implemented at that time) to 2007, the notional value more than doubled each year. Not surprisingly, in 2008 the meltdown of the CDS market led to a fall of more than half the market size.

4.1.4 Deposit Insurance

The introduction of deposit insurance affects equally banks and depositors. On the one hand, it reduces incentive for banks to gain the confidence of potential depositors and they can subsequently increase their risk-taking activities without having to fear too much that depositors are reluctant to make business with them. Likewise, banks can capture potential profits and shift potential losses to taxpayers. On the other hand, depositors can be more loose about the risk profile of their potential banks. They can almost exclusively concentrate on the rates they can get, at least those whose monetary stake is covered by deposit insurance. Similarly, shareholders can emphasize the payment of dividends and focus less on the risk profile⁷. It needs to be pointed out again that deposit insurance is not really an insurance in its nature, but a guarantee against loss which naturally magnifies the presence of moral hazard in the banking sector.

Empirically, the findings about the effects of deposit insurance confirm the theoretical evidence. Demirguc-Kunt and Detragiache (2002) analyze the im-

⁷However, shareholders are residual claimants and are paid at last in the case of a rescue by government.

impact of explicit deposit insurance⁸ on systematic banking problems for 61 countries between the periods of 1980 and 1997. Together with low GDP growth, inflation, declining terms of trade and the real interest rate, it increases significantly their likelihood of occurrence. Furthermore, they find that deposit insurance increases the costs for post crisis interventions. Moreover, Demirguc-Kunt and Detragiache (2002) identify that the frequency of bank crises rises as the ratio of deposit insurance coverage to per capita GDP increases. Countries with deposit insurance covering more than four times per capita GDP are five times more likely to suffer bank crises than countries with coverage of under one time per capita GDP. Barth, Jr, and Levine (2006, 220) confirm the results by Demirguc-Kunt and Detragiache (2002) and find that deposit insurance generosity and bank fragility is positive related.

Historically, bank leverage ratios increased sharply for US banks between 1930s and 1980s when deposit insurance was introduced (Dowd and Hutchinson, 2010). Together with the raise of federal deposit insurance coverage from \$40,000 to \$100,000 per depositor per institution by the Congress in 1980, it helped to trigger the biggest banking crisis, i.e. Savings & Loans crisis, in the 1980s and early 1990s since the Great Depression in 1930s (Kane, 1989). Coverage corresponded to approximately nine times per capita GDP (Demirguc-Kunt and Detragiache, 2002).

Historical and empirical evidence as well as theoretical explanations about the effects of moral hazard had not really the effect of persuading policy-makers around the world to refrain from the use of deposit insurance. To the contrary, between 1974 and 2003, the number of countries with explicit deposit insurance increased from 12 to 88 as documented by (Laeven, Demirguc-Kunt, and Karacaovali, 2005). The European Union adopted the use of explicit deposit insurance in its 1994 Directive on Deposit Insurance (Demirguc-Kunt and Detragiache, 2002).

Theoretical, empirical and historical evidence illustrate how deposit insurance contributed significantly to the increase in the banking sector. Balance-sheet enhancing risky activities and the use of debt instruments are more likely to occur. Likewise, investors and shareholders limit their risk monitoring which enforces this tendency.

4.1.5 Securities and Exchange Commission and European Securities and Markets Authority - Investor protection

The analysis of investor protection is quite similar to that of deposit insurance. The full responsibility of actions is not assumed by the concerned persons. Investors reduce risk monitoring and the regulated institutions concentrate rather on getting the label by these agencies than gaining investors trust by standard market mechanisms. Riskier behavior as would otherwise be the case is the consequence. Investor protection agencies, be it the SEC or ESMA, attribute

⁸Implicit deposit insurance is more difficult to measure as the actions of governments are less predictable if deposit insurance is not explicitly mentioned in legislative texts about banking regulation.

licenses to financial institutions signaling that they are effectively under their supervision and therefore “under control”. The over-reliance on external institutions to assess the riskiness of institutions is not exclusive to CRAs⁹, but also omnipresent for many other regulatory bodies in financial markets. As Higgs (1989) showed, governments expand as a response to national crises. Actually, this is the case for many government agencies.

The responsibilities of the SEC were not substantially altered by a single further major law between 1940 and 2002. However, after the dotcom crisis and the establishment of the *Sarbanes-Oxley Act* in 2002, it increased its responsibilities also to major financial firms such as investment banks (Issa, 2010). Likewise, in an attempt to simplify the harmonization of banking regulation and capital adequacy standards through Basel II, the SEC was given more power to supervise banks, investment firms and insurance companies (Dowd and Hutchinson, 2010). Furthermore, the introduction of the *Credit Rating Agency Reform Act* of 2006 enforced the position of the SEC.

If the regulatory power is concentrated and uniform, an increase of systemic risk is likely to be the consequence. A regulatory failure has a greater impact the higher the number of concerned entities. The SEC not only increased the size of the financial sector through implicitly assuming the risk of investors and financial institutions, but it also created direct incentives for risky balance-sheet transactions.

There are several regulatory failures that can be identified.

1. Five Commission investigations against Bernard Madoff during almost two decades did not spot any problem with his trading activity (Issa, 2010).
2. In 2004, the SEC established the Consolidated Supervised Entity (CSE) program (Issa, 2010). A regulatory regime that permitted large investment banking firms to voluntarily submit to the Commission’s supervision. This regulatory regime allowed broker-dealers owned by investment bank holding companies to be exempted from standard net capital rules if they agreed to be supervised by the SEC. Five investment banks chose to integrate this program: Bear Stearns, Goldman Sachs, Lehman Brothers, Merrill Lynch, and Morgan Stanley. As a consequence, the SEC was in charge to evaluate the models that were used by these entities to determine capital levels. Likewise, the SEC was responsible for overseeing the whole business of consolidated investment banks and to guarantee their stability. As Nadauld and Sherlund (2009) point out, “the rule change came in response to The European Union’s (EU) Conglomerates Directive which required that affiliates of U.S. broker-dealers be subject to consolidated supervision by a U.S. regulatory authority.” The change in the net capital rule led to an “estimated 30-40% reduction in capital deductions” (Fair and Carter, 2010). As outlined before, a decrease in the required capital incentivizes banks to engage into riskier activities, i.e. structured finance

⁹The role of the SEC for the increase in power of CRA through regulatory measures is analyzed in section 3.4

instruments, which was eventually documented by the performance of the concerned investment banks. Furthermore, as the SEC argued that they supervised investment banks correctly, it decreased significantly the incentives for private investors to supervise the investment banks on their own. In addition to change in the net capital rule, the delegation of supervision to the SEC within the CSE program increased even more the leverage within investment banks. Authors like Stiglitz argue that they increased from 12:1 to 30:1 or higher (Fair and Carter, 2010). By September 2008, Bear Stearns broke down financially and was taken over by JP Morgan at a bargain. Lehman Brothers filed for bankruptcy. Goldman Sachs and Morgan Stanley changed their status to be regulated by the Fed in order to benefit from the Fed's discount window, and finally Merrill Lynch merged with Bank of America. As a consequence, in September 2008, SEC Chairman Christopher Cox announced that "voluntary regulation does not work" (SEC, 2008) and that the regulatory gap for large investment bank holdings due to the Gramm-Leach-Bliley Act could not be filled with the CSE program.

3. Highest-profile frauds, including Enron and Worldcom have been discovered by journalists, academics and auditors, and not by the SEC (Issa, 2010)

This non-exhaustive list gives a few examples for the historical evidence about the regulatory failures of the SEC. In addition to these problems, there are other issues the commission has to cope with. As documented before, the responsibilities and the workload of the SEC increased, however the technological progress did not. As Katz (2010), former SEC's Secretary between 1984 and 2006, points out, the SEC checks corporate filings manually and uses pencils as well as calculators to evaluate them.

It is not just to fully blame the SEC for these shortcomings, but it illustrates yet again the pretense of knowledge problem (Hayek, 1975). Financial regulators presume they have the necessary knowledge to cope with problems which they brought about in the first place. However, there is no way to possess this knowledge in reality. As Hayek (1945) convincingly argued, knowledge is local and dispersed throughout society. Each market participant holds certain information at a particular time and place which is most of the time unknown to others and cannot always be articulated. Furthermore, in a world of constant change, collected information is quickly outdated even if it were possible to have full knowledge about what is going on. And nothing is further from the truth. To the contrary, the financial industry paid higher salaries than the SEC and attracted more qualified employees and better lawyers. Likewise, as documented above, the biggest investment banks had the latest technical programs available to convincingly argue that their models are top notch and appropriate for determining for instance net capital. The regulated industries are always one step ahead and financially far more potent than the regulators. These are not conditions which are likely to allow regulators to acquire full knowledge to

formulate the right interventions, even if regulators do not accept the argument about the dynamic world.

4.2 Monetary mechanisms and monetary policy

The cost of equity is generally considered to be much greater than the cost of debt due to factors such as tax considerations, access to government safety net as deposit insurance (which does not apply for equity) and leverage effects. Regulatory arbitrage allows banks to replace equity by debt in their current capital structures. The equity can be used to increase shareholder return, the return on equity. The more regulatory arbitrage permits debt to be substituted for equity, the higher the incentives to engage into regulatory arbitrage. The section before outlined potential different reasons that increased the incentives to pursue these activities. However, while these factors provide a better understanding of how the financial sector became so big, it is important to understand how monetary policy in addition to financial regulation makes the substitution of debt for equity even more lucrative. Financial regulation by itself cannot account fully for the unsustainable increase of debt securities. The reason is the natural limit of funds made available by savers. However, monetary mechanisms eliminate this obstacle and provide conditions for apparent infinite asset growth through different measures.

Monetary mechanisms Money evolved spontaneously in the market. Historically, gold and silver were chosen as the common medium of exchange for their practical purposes. For reasons of convenience, warehouses arose to store these metals and certificates were issued. As a consequence, certificates were traded in everyday business and rarely redeemed into gold. Unfortunately, this created a temptation to engage into fractional reserve banking and to issue certificates in excess of the actual gold reserves. At some point, governments entered into the game and monopolized the minting of coins and established legal tenders laws. Under the classical gold standard, a fractional gold standard was institutionalized and guaranteed by the respective states. Fractional reserve banking diminishes the cost of money production and increases the profitability of banks. As a consequence, there is a tendency to threaten the financial stability of banks as the continual issuance of credits in excess of savings eventually is discovered by depositors and creditors. Bank runs and the liquidation of assets are naturally the cause as people lose confidence. Together with maturity mismatching, this profitable business model is very fragile.

The drawbacks of the business model must be resolved by some external institution that guarantees the liquidity of banks. This is the role of central banks (Bagus, 2012). Central banks are lenders of last resort for commercial banks. Banks can now refinance their debt through short-term credits and liquidity problems can be limited as the production of money is coordinated by the central bank. However, as the fiduciary media were still linked to the gold standards, even coordinated money expansion was limited as the fear of redemption in a crisis could prove to be insufficient. By the 1970s the burden

of the gold standard was removed as well and the doors were further opened for the lucrative business of money creation.

Fiat money, fractional-reserve banking and moral hazard The new fiat money standard magnified moral hazard at a large scale. Fiat money allows producers of money to “create *ex nihilo* virtually any amount of money”Hülsmann (2006, 10). Excessive risk-taking and exuberant debt-making have been facilitated for the financial sector under these conditions. The illusion of infinite asset growth can be fueled easily as the production of money can be done at almost no cost. The analysis of bailout guarantees has already been provided in the section about financial regulations without specifying where the resources for the rescue come from. In theory, tax money, government savings or confiscation of deposits could be used to finance these undertakings. However, with the introduction of fiat money and the possibility of creating “*ex nihilo* virtually any amount of money”, the temptation to have recourse to this source of financing has been substantially increased. The potential problems associated with fiat money, fractional reserve banking and central banking have already been outlined as soon as in the beginning of the 19th century.

Thornton (1939) already emphasized in 1802 the potential moral hazard that can be brought about by the existence of implicit bailout guarantees. As Thornton observes:

It is by no means intended to imply, that it would become the Bank of England to relieve every distress which the rashness of country banks may bring upon them; the bank, by doing this, might encourage their improvidence. There seems to be a medium at which a public bank should aim in granting aid to inferior establishments, and which it must often find very difficult to be observed. The relief should neither be so prompt and liberal as to exempt those who misconduct their business from all the natural consequences of their fault, nor so scanty and slow as deeply to involve the general interests. These interests, nevertheless, are sure to be pleaded by every distressed person whose affairs are large, however indifferent or even ruinous may be their state. Thornton (1939, 188)

Likewise, Walter Bagehot, who is typically considered to have coined the term of lender of last resort with Henry Thornton, observed in 1873 that “the cardinal maxim is, that any aid to a present bad Bank is the surest mode of preventing the establishment of a future good Bank”Bagehot (1931, 106). Furthermore, he points out that “indisputably one of their effects (the suspensions of Peel’s) Act is to make people think that Government will always help the Bank if the Bank is in extremity. And this is the sort of anticipation which tends to justify itself, and to cause what it expects.”Bagehot (1931, 108).

In the same line of argument, Simons (1936) stressed the use of rules in contrast to discretion for monetary policy. He argues that: “The liberal creed demands organization of our economic life largely through individual partici-

pation in a game with definite rules. It calls upon the state to provide a stable framework of rules within which enterprise and competition may effectively control and direct the production and distribution of goods” Simons (1936, 1). Thus, the idea that government could control the currency to manage aggregate economic outcomes violated the liberal creed. However, in order to avoid the management of the money supply, he proposed to eliminate fractional-reserve banking. Simon also proposed substantial reforms of financial practices as he was aware of the problems associated with maintaining monetary stability since the creation of monetary substitutes was still incentivized by fixing the supply of deposits. Fisher criticizes the role of the Fed and points out that its establishment led to lower reserve requirements and that the number of bankruptcies in the banking sector were actually lower before (Fisher, 1996, 44). Credits are not linked to the money that is created, but to savings. Thus, the credit expansion is limited by the available funds of savings Fisher (1996, 75).

The outlined ideas ultimately gave rise to the *Chicago Plan*, a plan of monetary reform and a call to end fractional-reserve banking. The text was supported amongst others by economists such as Frank H. Knight, Lloyd W. Mints, Henry Schultz, Garfield V. Cox, Aaron Director, Paul H. Douglas, or Albert G. Hart in addition to the already mentioned Herbert Simons and Irving Fisher.

Defenders of the currency school such as Ricardo, Thornton or Torrens (Rothbard, 2010) as well as, in a similar line of argument, Mises (1980) and his followers such as Hayek (1934), Rothbard (2010), Huerta de Soto (2009) or Hülsmann (2008) insist on the use of gold for backing the issuance of new bank notes. While the Chicago inspired economists argued for a 100 per cent requirement with the aim of making monetary policy more effective, Austrian inspired economists consider it as a necessary prerequisite for the correct functioning of the market economy. Although not all of these authors agree about the strategy of how to minimize excessive risk-taking, they acknowledge the role of unbacked fiat money for the increase in financial fragility. A condition which has been fully met by the beginning of the 1970s.

Monetary policy since 1970s in the United States Under the regime of William McChesney Martin from 1951 to 1970 the monetary policy was relatively conservative. Inflation rates were below 3 percent during the early 1960s. By 1970, Martin was replaced by Arthur F. Burns who contributed to a period of high inflation and very low real interest rates, a byproduct of loose money now simplified by the full fiat money standard. Even though, federal funds rates were eventually raised during the next years, they never kept up with the running inflation rates and real interest would only be over 2 percent in the second quarter of 1976 Fernandez-Villaverde, Guerran-Quintana, and Rubio-Ramirez (2010, 26). After a short intermezzo by Miller whose tenure ended into an emergency sale of US gold and borrowings from the International Monetary Fund (IMF) (Dowd and Hutchinson, 2010, 251), President Carter moved Miller to the Treasury department and appointed Volcker as the chairman of the Fed.

As a consequence, federal funds rate increased significantly from 2% to 12%

(Dowd and Hutchinson, 2010, 251) and real interest rates remained high during the 1980s. Just as Burns, he was also invited to give the Per Jacobsson Lecture, but concluded that inflation had been defeated under his regime. Another chairman, Alan Greenspan, a big supporter of the deregulation of the banking sector, was appointed under Reagan (Dowd and Hutchinson, 2010, 252).

Greenspan emphasized that inflation must be kept low. (Fernandez-Villaverde, Guerran-Quintana, and Rubio-Ramirez, 2010, 32) However, Greenspan responded to the stock market crash of October 1987 by cutting interest rates and by declaring that the Fed is disposed to provide “liquidity” in such a case Fernandez-Villaverde, Guerran-Quintana, and Rubio-Ramirez (2010, 32). Later, interest rates were kept low, even as inflation reached 6 percent during 1989-1990. The policy of low interest rates continued until 1994, where Federal funds yield reached the lowest levels since the 1960s. As a reaction to this inflation scare, interest rates doubled, although Greenspan was reluctant to take this action initially¹⁰. However, this led to big losses for many entities that were betting on low interest rates. Most notoriously California’s Orange County defaulted on its debt by speculating with derivatives on low interest rates (Dowd and Hutchinson, 2010, 253).

By February 1995, Greenspan announced that his policy of increasing rates is over¹¹. Effectively, the money supply growth was 2,6% higher than nominal GDP during this tenure. The failure of Long-Term Capital management in 1998 (Lowenstein, 2001) illustrated perfectly the approach which was taken by the Fed by now. Not only was a bailout organized, but under Greenspan interest rates were cut three times subsequently to calm down financial markets. This low-interest policy basically allowed to maintain more activity of unsustainable trading activities. Ultimately, this policy fueled the dotcom bubble during which stocks were even more overevaluated than during 1929 (Garrison and Callahan, 2003). As a consequence, interest rate raises followed in the year 1999 and 2000 which eventually triggered the bust of the stock market. However, already by 2001, federal funds rates were lowered again to fight the ongoing recession. Together with the occurrence of the 9/11 terrorist attacks and fiscal policy under the newly elected President Bush, interest rates attained the lowest level since 1961 by the year 2002. From 2002 to his retirement in January 2006, Greenspan kept interest low below 3%. This period also witnessed the housing bubble and the closely tied structured finance crisis. The burst of this bubble finally led to the current financial crisis. The following “non-moderate” recession is accompanied by nominal interest rates which are currently approaching zero, while real interest rates are simply negative.

Ever since the fight on inflation of the early 1980s under Volcker, interest rates have been declining. The most substantial reductions happened in the post-era of the dotcom bubble and as a response to the terrorist attacks of 2001. The reduction of the cost of debt consequently eased the issuance of debt securities in the financial market. Ever since the attribution of the NRSRO sta-

¹⁰Board of Governors FOMC Transcripts, February 3-4, 1994, p. 55

¹¹Testimony to the House Banking Committee, February 22, 1995)

tus which has been provided by the SEC in 1975, this automatically translated into more rating activities of CRAs.

4.3 Structured finance

Structured finance is basically about transforming assets such as loans, bonds and mortgages into securitized tranches. These claims are often better suited for many investors who are usually not interested in buying lower quality assets in the first place. Indeed, the pooling of assets into a well-diversified portfolio is assumed to theoretically reduce the so-called idiosyncratic risk.¹² CRAs provided their respective evaluation models for free and made them publicly available. In this manner, it was relatively easy to construct a prioritization scheme of the underlying portfolio's cash flows so that many of the provided tranches of varying credit quality are actually "safer" than the average asset of the pool under consideration. To be more concrete; one can repackage risky subprime mortgage loans and create virtually risk-free assets as certified by CRAs in form of a AAA ratings. Considering that "an AAA rated corporate bond should exhibit the same degree of credit quality as an AAA rated securitized debt issue"(Standard & Poor's, 2007), one can easily understand how this leads to a significant expansion of these products. For instance, an AAA bond has a 10-year historical default probability of 0.36 % (Standard & Poor's, 2005), but relatively low yields, while AAA rated structured finance products obtained higher returns and equally complied with regulatory standards.

Ratings are used by investors, bankers, regulators and other actors as relevant risk metrics, however the real meaning of a rating is not always well understood. Credit ratings are only "opinions about the relative creditworthiness of a security" (Standard & Poor's, 2009). These ratings are not equivalent to concrete estimates of default probabilities. As already pointed out before, an event of default is a straightforward example for case probability in the Misesian definition (Mises, 1966). Traditionally, CRAs used fundamental credit analysis to formulate an ordinal alphanumeric rating scale. However, CRAs would not mind to juggle with default probabilities in order to determine a rating for structured finance instruments as fundamental analysis is practically impossible since in most cases the original owners of the underlying assets are not known.

As outlined before, Moody's, S & P and Fitch were already in the rating business for about a century. They specialized in the collection of financial, industrial and economic data to assess independently the creditworthiness of various institutions, governments and corporations. Until the emergence of structured finance, CRAs only evaluated instruments or issuers that could be clearly attributed to a single entity. CRAs changed their business model and became more or less pure quantitative analysts to include the lucrative sector of structured finance. Right from the start, the risk of the different tranches was evaluated by CRAs as issuers were eager to get the same scale of ratings for their

¹²It will be explained later on, why this was not the case in practice and chapter 9 explains why this was not even conceptually or theoretically possible.

innovative products. The whole structured finance business started as a rated one and the entities which composed them only existed for their rating. This new business branch naturally demanded a different type of workforce which is more specialized in financial engineering. However, as Didier and Weill (2012, 106) point out, the wages that are offered at the leading CRAs are a lot lower than for comparable work in investment banks. In particular, CRAs do pay small premia and remunerate independently from the commercial success to avoid conflicts of interest. Naturally, this attracts a large number of analysts who do not consider themselves as economists (as it is the case with the other rating business), but as financial engineers that could not land a job in a better paid investment bank. Since the fundamental business branch performed relatively well, the qualitative analysts feel that the poor performance of CRAs in the case of structured finance is not doing them justice (Didier and Weill, 2012, 111).

So why was there such a strong demand for their rating services with regard to securitized assets? In particular, institutional investors and many other actors are obliged to hold AAA assets in their portfolio. The relative higher supply of highly rated structured finance products significantly simplified the accomplishment of this regulatory mission.

To obtain an AAA, the likelihood of default within a year must be less than 1 in 250.000 and since 1920, no AAA corporate bond ever defaulted within a two year horizon (Gordy and Willemann, 2009). In contrast, Hunt (2008) estimates that 36 % of all collateralized debt obligations (CDOs) based on US asset backed securities had defaulted by July 2008. Similarly, the first AAA constant proportion debt obligation (CPDO) defaulted only eight months after its issuance (Gordy and Willemann, 2009).

By December 2008, around 35 % of the outstanding debt of US bond market debt was represented by structured finance instruments. Moody's attributed the highest rating, AAA, to more than half of these products. Fitch (2007) report similar figures by stating that approximately 60 % of structured securities obtained an AAA, while less than 1 % of corporate bonds obtained this prestigious rating. According to Griffin and Tang (2010), "only 1.4 of AAA CDOs closed between January 1997 and March 2007 met the rating agency's reported AAA default standard", which is a number much closer to what is observed in the corporate market. The low interest regime established by central banks led to promising high yields pushing investors to buy structured securities. By 2006, Moody's reported that 44 % of its revenues came from rating structured finance assets while only 32 % were levied from corporate bonds. The fall of structured was already set in motion in 2007, as Moody's downgraded 31 % of all tranches for asset-backed CDOs (BIS, 2008, 20).

In retrospect, it seems clear that these securities were a lot riskier than originally advertised by credit rating agencies. As Coffee (2010) points out, "the failure of CRAs was almost uniquely" with this kind of financial products. Yet, how could this happen in the first place? Again to attract a larger investor base that is constrained to purchase "highly rated" products to add to their portfolio for different reasons such as accounting, minimum capital requirements or taxes; a market which was largely limited to sovereign debt before. As

illustrated by the high rise of structured issues and the increase in revenue, CRAs were not disinclined to get their own share of the growing pie. By using the same language of credit ratings, they significantly contributed to the illusion of being able to evaluate these complex products in the same way as they do, for instance, with corporate bonds. Furthermore, internal credit analysis by sophisticated institutional investors just seemed out of reach for these opaque securities (Coffee, 2010) and using external credit ratings decreased the capital requirements.

The whole financial sector was incentivized to have recourse to structured finance products as it decreased the cost of debt and freed up capital to engage into riskier, but more profitable opportunities. AAA rated securitized assets yield much higher returns, but provide the same regulatory status as equally rated corporate bonds or sovereign debt. Together with the measures of financial regulation and accommodating monetary policy that have been outlined before, structured finance allowed the financial sector to even exacerbate their “profitable” undertakings and become even more leveraged entities. As these instruments basically only existed for their ratings, it can account for a lot of the rise of the credit rating industry since the end of the 1990s.

4.4 Dynamics of interventionism

The analysis of financial regulation and monetary policy to understand the steady growth of the financial sector can be generalized in the light of Mises’ critique of interventionism (Mises, 1977). He illustrates how government interventions into the market economy do not only hamper the interaction between economic actors, but they are also likely to cause further interventions which inevitably lead to a growth in government. Interventions lead to unintended consequences which need to be remedied by either removing the initial actions or by using further interventions to cancel out the initial wrong-doings. However, these interventions are likely to cause further unintended consequences. Additional interventions are required to eliminate the negative side effects. Policy-makers enter into a vicious circle which results in dynamics of interventionism. Ikeda (1996) summarized the idea of Mises in the following way:

Perceived problem in a -> intervention in a -> problems in a and b
-> intervention in b -> another problem in a -> another intervention
in a -> problems in a, b, and c -> more intervention in a, b and c
-> crisis in a -> etc. (Ikeda, 1996, 133)

Higgs (1989) shows in his magnum opus “Crisis and Leviathan” that the main reasons for growth in government lie in their interventions to respond to crises. However, as government power grows, it becomes ever more complicated to reduce its size and scope. This article analyzes how interventions in financial regulation and monetary policy have steadily increased the size and scope of the financial sector and consequently the power of credit rating agencies.

The financial sector and governments readily accepted the increasing role of credit ratings in regulation as long as they served their interests. It allowed the

banking sector to reduce their equity gently and to increase profitable activities by having highly rated assets in their balance sheets. Government debt of Western countries typically obtained high credit ratings previous to the outburst of the current crisis which helped them to further fuel the demand for their securities.

Shaw (1973) and McKinnon (1973) first introduced the term of financial repression. A concept which has been revived recently by economists such as Carmen Reinhart and Kenneth Rogoff, authors of *This Time is Different: Eight Centuries of Financial Folly* (Reinhart and Rogoff, 2011). The definition is as follows:

“Financial repression occurs when governments implement policies to channel to themselves funds that in a deregulated market environment would go elsewhere. Policies include directed lending to the government by captive domestic audiences (such as pension funds or domestic banks), explicit or implicit caps on interest rates, regulation of cross-border capital movements, and (generally) a tighter connection between government and banks, either explicitly through public ownership of some of the banks or through heavy “moral suasion.” Financial repression is also sometimes associated with relatively high reserve requirements (or liquidity requirements), securities transaction taxes, prohibition of gold purchases, or the placement of significant amounts of government debt that is nonmarketable. ” (Reinhart, Kirkegaard, and Sbrancia, 2011, 1)

The current literature about CRAs does not acknowledge that they can be interpreted as an indirect tool of financial repression to allow governments to issue debt at lower rates than would otherwise be possible. Financial regulations incentivized banks to hold large amounts of highly rated debts, i.e. government obligations until the occurrence of structured finance. Only a very small percentage of corporate bonds obtained the prestigious AAA rating. For instance, in 2007 less than 1 % of corporate bonds obtained the highest rating (Fitch, 2007).

As this article argued, these conditions significantly reduce the cost of debt for the banking sector through lower equity and provided more favorable refinancing costs for governments. CRAs significantly increased their incomes due to their increasing rating activities. The banking sector could more easily expand its balance sheet activities together with the cheap refinancing conditions engendered by gentle monetary policy and the implicit guarantee to be bailed out when things turn sour. Governments benefited from favorable borrowing conditions, although the debt levels constantly increased. Consequently, it should not come as a surprise that rating activities increased during this period.

5 A reform proposal

The findings of this article allow to deduce some practical implications for the reform of the credit rating industry. The major role of CRAs in the subprime crisis and its actions during the sovereign debt crisis brought about calls by policymakers around the world to further regulate this industry. However, this approach ignores how CRAs became financial market authorities in the first place. Furthermore, more regulation is likely to further institutionalize the use of credit ratings and lastly, the performance of financial regulators during and previous to the crisis do not lend support to the argument that they should supervise CRAs even more closely. However, the CRAs definitely contributed to the on-going crisis by helping the financial sector to even further increase their risky activities. They attributed too optimistic ratings about the creditworthiness of structured finance products and overevaluated the soundness of commercial banks, as documented by the massive downgrades of CDO tranches in 2007 or high credit ratings for Icelandic banks just months before the whole economy collapsed.

This article does not argue for less regulation as for instance White (2010a) does, but for no regulation at all. CRAs emerged spontaneously on the market as independent information providers about the creditworthiness of financial instruments over a century ago. For sure, the railway industry only came into life due to heavy state subsidies which made the need for these institutions apparent, but CRAs acted as independent companies at that time. Policymakers around the world justly criticize the role of CRAs for exacerbating the effects of the financial crisis due to their role within financial regulation.

However, by integrating credit ratings into financial regulations around the world and by creating the necessary conditions for the explosion in debt securities since the 1970s, government interventions were singly responsible for the growth of these agencies. The use of credit ratings to determine portfolio, capital or collateral requirements incentivized banks and other economic actors to invest into highly rated securities, i.e. government debt of Western countries and structured finance products in the last fifteen years. As long as the use of credit ratings allowed governments to borrow at low financing costs and gave the banking sector the opportunity to reduce equity with the aim of increasing their profitability, the market authority CRAs was readily accepted by all major financial market players and not put into question. CRAs highly benefited from this situation and their spectacular increase in size was not likely to avoid calls for reform in case of a financial downturn.

The determination of ratings by firms such as Standard & Poor's, Moody's, and Fitch in a competitive environment helps economic actors to make judgments about the creditworthiness of otherwise less transparent records of market participants. Assurance mechanisms like these naturally occur in the markets and constitute an essential body within the institutional framework in which financial transactions take place. However, institutional failures are likely to occur, when political and regulatory actions distort the operations of these institutions.

5.1 Do we need more regulation?

The current strategy to give more power to existing regulatory institutions is not likely to be crowned with success. It exacerbates problems to a global level and increases system risk as these measures are not specific, but apply to the financial markets and the real economy as a whole.

As outlined before, financial regulators cannot have the necessary knowledge or the resources to aptly intervene in a world of constant change. Even if it was theoretically conceivable, historical evidence shows that financial regulators were notoriously lacking the means to effectively supervise the industry they regulate as documented by the SEC and their failure to oversee the investment banks for instance. Furthermore, financial regulators around the world created the incentives for the financial breakdown in the first place, however were incredibly inert to spot what was going on. Even more interestingly, in many cases they detected the deficiencies and still decided not to act.

Why were the Fed, the SEC and the FDIC not taking steps about the increasing balance sheets and non-viable leverage levels in the banking sector which was brought about by their policies in the first place? Why was the FSA granting a Basel II waiver to Northern Rock just a few months before it went bankrupt (HoC, 2008)? Why observed the Irish Financial Regulator mutely how the Anglo-Irish bank grew by 40 percent a year during the years preceding the crisis Kelly (2009, 24)? How could the Icelandic Financial Supervisory Authority FME not see the red flag for the Icelandic banking sector as the three biggest banks ultimately reached assets that were eleven times the GDP of Iceland (RA, 2010a)? How could the Bank of Spain encourage the violation of accounting principles through dynamic provisioning and still be convinced in 2009 that Spanish banks were doing well (de Lis and Herrero, 2009, 8)?

5.2 Are regulators biased?

There is large evidence that regulators are biased. The financial services industry is closely interconnected with the financial policy makers through the financing of political campaigns as well as personal and professional relations. Many members in the Fed are appointed with the help of the banks they regulate Levine (2012, 3). Icelandic banks contributed strongly to the political campaign of the ruling party Gylfason (2010). Many parliamentary members had financial stakes in the failing sector. The Spanish *cajas* are heavily politicized and board members were mostly appointed by political members (Cunat and Garicano, 2009, 3). Regulators frequently go into the private sector they regulate and raise their salaries multiple times. For instance, nearly two-thirds of Promontory Financial's roughly 170 senior executives worked at agencies that oversee the financial industry (CNBC, 2013).

Regulators do behave in their own interest just as every other economic actors does. There is no logical evidence that government behaves in an altruistic manner, while every other category of economic actors only aims to "maximize" their own private interests. It is virtually impossible to perfectly align the in-

terests of regulators with those of the public. There are incentives to enrich themselves by the coercive power that has been attributed, especially as the authorities are not independent from the very entities they are supposed to regulate. The only institutions that assess the financial regulators are regulators themselves.

Furthermore, economists can analyze the incentives of the measures that have been taken by these institutions and identify possible causes for financial disasters, but they do not have all the information that is necessary to fully grasp the problem. The most prominent example happened in June 2008 when Bloomberg reporter Mark Pittman filed a request for information about the lending strategy of the Fed Watzman (2011) . It was not until March 2011 that the Fed released 896 unsearchable PDFs as the US Supreme Court required them to do so.

However, even if regulators were not biased, they lack the sufficient knowledge to intervene in an adequate manner.

5.3 Do regulators have the necessary knowledge to aptly intervene?

Financial regulators presume that they have the necessary knowledge to cope with problems which they brought about in the first place. However, there is no way to possess this knowledge in reality. As Hayek (1945) convincingly argued, knowledge is local and dispersed throughout society. Each market participant holds certain information at a particular time and place which is most of the time unknown to others and cannot always be articulated. Furthermore, in a world of constant change, collected information is quickly outdated even if it were possible to have full knowledge about what is going on. And nothing is further from the truth. The regulated industries are always one step ahead and financially far more potent than the regulators. These are not conditions which are likely to allow regulators to acquire full knowledge to formulate the right interventions, even if regulators did not accept the argument about the a dynamic world and constant change. For instance, the SEC still filed corporate filings manually and was overwhelmed by the workload due to their responsibilities, especially, since the SEC officially supervised the major investment banks within its CSE program. To recall, the SEC announced in April 2007 that they were effectively supervising these entities. Within 18 months each bank had to file for bankruptcy, be bailed out or saved by a rescue merger. Likewise, the FME could not cope with the changing practices of the banks it was supposed to supervise (RA, 2010b, 1). The Bank of Spain had to have recourse to an external consultant to run stress tests for the banks it is supposed to regulate Wyman (2012). The Irish Financial Regulator used “an under-resourced approach to supervision”(GCBI, 2010, 16).

5.4 Do CRAs need more regulation?

CRAs played a major role in the subprime crisis as structured finance products were only put into existence for their rating. CRAs failed in several aspects with regard to correctly assessing the creditworthiness of these asset-backed securities. Their evaluation models were too simplifying, based on wrong assumptions and featured the “pretense of knowledge” problem. The close involvement in the design process opened doors for conflicts of interest and rating shopping. Deteriorating quality of employees, excessive workloads and decreasing transparency of the underlying assets led to a decline in the ratings quality. Thus it can hardly be denied that CRAs failed in their duty to provide correct ratings about the creditworthiness of financial instruments; however if financial regulators had not delegated so much power to CRAs in the first place, many issues could have been avoided.

Recent plans to set up an European Credit Rating Agency¹³, an International Rating Agency (Brazil, India, South Africa, Portugal and Malaysia) are not likely to avoid similar problems in the future if credit ratings keep being used extensively in regulations. The blueprint for an international non-profit CRA by Bertelsmann¹⁴ is very praiseworthy, but their use should be voluntary and based on the needs of the investors. Although there is always room for improvement with regard to the evaluation methodology of CRAs, these public agencies are not the solution. The creation of these institutions actually increases the criticized overreliance on CRAs and institutionalizes them even further. More power to the financial regulators is the wrong strategy in the current situation. This also applies for the case of credit ratings. The provided evidence underlines that financial regulators are not able to effectively supervise CRAs and even less to deliver a viable alternative to the existing structures. A failure of an EU CRA probably undermines even more the authority of the European Union. As long as policy-makers are convinced that poor rating quality is the essence of the problem, any reform plan is doomed to failure.

5.5 Should ratings be completely removed from financial regulation?

What would happen if credit ratings were simply removed from regulatory texts altogether? Critics might point out that this measure would go too far and leave an administrative mess as no viable alternatives are available.

As far as the collateral requirements for the ECB are concerned, it is about a powerful financial regulator that perfectly possesses the resources to evaluate the quality of the collateral themselves. If credit ratings were implemented to convey a stronger signal of independence, then this project can already be identified as a failure. The ECB single-handedly decides about the minimum

¹³<http://blogs.telegraph.co.uk/news/danielhannan/100095706/eu-leaders-blame-the-euro-crisis-on-american-credit-rating-agencies/>

¹⁴<http://www.bfna.org/publication/blueprint-for-incra-an-international-non-profit-credit-rating-agency>

requirements since October 2008. Even junk-rated government bonds are accepted as a collateral.

It is a little bit more complicated to sketch a transitory situation for substituting the use of credit ratings in the current Basel framework. Basel already provided an internal ratings approach such as FIRB and AIRB to measure the credit risk for banking institutions that meet certain minimum conditions and are approved by the national supervisor. Whether these internal approaches are flawed and allow banks to further leverage their entities, is another point of discussion. As long as the monetary mechanisms and financial regulations create excessive moral hazard for the banking sector, any approach of prudential regulation is unlikely to work. In any case, these are readily available alternatives for the use of credit ratings in the current Basel framework.

Likewise, less sophisticated banks can have recourse to their own techniques for evaluating the equity they should keep in their balance sheets. In their case, the danger of “contagion” as put forward by financial regulation, is less developed at any rate. As long as they are not incentivized to overleverage their entity, there is no reason to believe that they would not put enough equity aside. Again, prudential regulation can only channel funds into certain assets, but inasmuch as moral hazard created by monetary policy weakens their incentives to be “prudent”, it only brings about different techniques of regulatory arbitrage and not more capitalized banks.

Furthermore, the use of credit ratings to evaluate sovereign debt is already of limited value at any rate as “at national discretion, a lower risk weight may be applied to banks’ exposures to the sovereign of incorporation denominated in domestic currency and funded in that currency”(BIS, 2001, 7). Thus, most banks already have huge holdings of their own government’s debt independent from their credit ratings as documented by the balance sheets of European banks. Similarly, the new banking rules issued by the European Commission will sharply increase “the amount of reserve capital that banks must keep on hand, in line with guidelines agreed to by the Group of 20 nations. But European government bonds will continue to be considered risk-free and immune to capital requirements, at least until 2015”(Ewing, 2011). Hence, just as it is the case with the ECB, credit ratings are only used in the case in which they attribute sufficiently high credit ratings. The use of these alphanumeric symbols is suspended, as soon as they do not longer allow potential collateral assets to be eligible for regulatory purposes. Therefore, it might be questioned why credit ratings would be necessary in the first place. If the purchase of sovereign debt was more directly communicated by the regulatory authorities without the indirect use of credit ratings, their measures of financial repression would be more transparent and CRAs would not be instrumentalized for these purposes. As mentioned before, CRAs readily accept this position as it allows to increase their income substantially, but there is no obvious reason, why they are absolutely necessary for evaluating sovereign debt.

Lastly, credit ratings have been integrated into regulatory texts for their stability through time. However, while this is useful for evaluating the credit-worthiness of the rated assets, it does not necessarily convey the timely infor-

mation about the financial soundness of banks. Thus, the financial regulatory body should in any rate have recourse to other market indicators for supervisory purposes. For instance, secondary market spreads of bond debt may provide valuable data about the financial conditions of the banking industry (Pop, 2009, 20). Users of credit ratings should be held responsible again and make their own choices of how to evaluate their portfolio. This is the only reasonable step to turn back the credit rating industry into their original status of small independent providers of opinions about the creditworthiness of debt issuers.

6 Conclusion

The prerequisites for the growth of the credit rating industry have been set by government officials. Governments and similar institutions not only attributed “regulatory” licenses to CRAs, thereby creating an income guarantee for CRAs, but they are also the most important driver of the explosion in securities which require a rating. CRAs became financial market authorities because governments and policy-makers were in favor of it.

International and domestic regulatory authorities created incentives to purchase sovereign debt, either directly or indirectly via the use of credit ratings. CRAs can be interpreted as tools of indirect financial repression to allow governments to issue debt at lower rates than would otherwise be possible. Financial regulations incentivized banks to hold large amounts of highly rated debts, i.e. government obligations until the occurrence of structured finance. As already mentioned before, only a very small percentage of corporate bonds obtained the prestigious AAA rating. For instance, in 2007 less than 1 % of corporate bonds obtained the highest rating (Fitch, 2007). The use of credit ratings paved the way for low priced debt financing.

These conditions significantly reduce the cost of debt for the banking sector through lower equity and provided more favorable refinancing costs for governments. CRAs significantly increased their incomes due to their increasing rating activities. The banking sector could more easily expand its balance sheet activities together with the cheap refinancing conditions engendered by gentle monetary policy and the implicit guarantee to be bailed out when things turn sour. Governments benefited from favorable borrowing conditions, although the debt levels constantly increased.

The main measure of financial repression is monetary policy as Reinhart, Kirkegaard, and Sbrancia (2011) outline. Fractional-reserve banking and fiat money magnified its impact for the financial sector. As virtually any amount of money can be created *ex nihilo*, moral hazard and excessive risk-taking are increased in financial markets. Furthermore, it led to a substantial increase in public debt as documented by its excessive evolution since the 1970s, when basically all the national currencies were established as paper monies. Monetary policy provided the necessary conditions for the substantial increase in the balance sheets of banks and in public debt. Regulations channeled funds into the

banking sector and the market for government debt, but monetary policy and credit expansion provided the necessary supply for the unsustainable growth. Without these policies, the banking sector, the mortgage sector or the government simply have to rival with all the other market players for the funds that are made available by savers.

The financial stability has been weakened and systemic risk substantiated by policies of financial repression. Banks and insurances could basically put no equity aside for highly rated debt within the framework of Basel and Solvency II. Paradoxically, current reform plans still encourage the financial sector to invest into government debt after the recent experiences. The role of CRAs for the current financial crises can be understood in this light. CRAs further exacerbated the indebtedness by governments which was brought about by the accommodating monetary policy and fueled the structure finance bubble, but those very government officials around the world happily accepted the transformation of CRAs to financial market authorities at the outset. The state is a major player on the financial markets and CRAs allowed them to channel funds into their securities without using more direct forms of financial repression as outlined above. Originally, only instrumentalized in the US regulatory system, the use of credit ratings was transferred to a global level with the introduction of the Basel capital adequacy framework from 1988 onwards. These days, they are used by several financial market authorities and the European Central bank for different collateral requirements.

Credit ratings can also have negative impacts for the borrowing conditions following a downgrade. However, due to their instrumentalization, credit ratings tend to be higher than they should actually be, as documented by the too optimistic ratings during the EU sovereign debt crisis. The income guarantee for CRAs depends ultimately on their regulatory use, thus the use of credit ratings would be of low value if they constantly deteriorate the borrowing conditions for those who primarily implemented them. Calls by European policymakers¹⁵ underline the endeavor to have own agencies to evaluate the quality of their debt, even if these proposals have been ultimately rejected the competent decision-takers (EP, 2011). Likewise, the European Central Bank now fully ignores minimum rating requirements for their collaterals and buy government debt independently from their credit rating. The Basel framework already allows to assign a risk-weight to sovereign debt “at national discretion”. CRA aim to provide objective and independent evaluations of the creditworthiness of debt securities, but their institutional role seriously compromises this role. The ambiguous situation of CRAs and their status of a private market authorities should be tackled in a serious manner by policy-makers and not by proposing the current measures. They simply change the mechanism of assigning credit rating agencies and weaken their independence by requiring the approval of current rating methodologies through official market authorities. There is still no political consensus to put into question the concession of regulatory licenses to

¹⁵<http://blogs.telegraph.co.uk/news/danielhannan/100095706/eu-leaders-blame-the-euro-crisis-on-american-credit-rating-agencies/>

CRAAs.

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