

Louvain School of Management

Is there any viable future for the credit rating industry in Europe? Analysis of new set of regulations set up by the new European institution (ESMA) charged to supervise the credit rating industry.

Mémoire recherche réalisé par
Alexy Cabu

en vue de l'obtention du titre de
Master 120 crédits en sciences de gestion, à finalité spécialisée

Promoteur(s)
Prof. Luc Henrard

Année académique 2016-2017



Abstract

Credit Rating Agencies have been highly criticized for their influence on financial market. Investors have been too dependent on credit ratings realized by these agencies in their investment decision and the crisis 2008 has put into evidence the errors made by Credit Rating Agencies. It has also allowed market agents to realize that systematically considering Credit Rating Agencies opinions could lead to mistake in their decisions. In a first step, this master's thesis analyses the regulations that have been put into force after the crisis 2008 in the European financial market. It is focused on the so-called CRA III regulation –regulation (EU) NO 462/2013 – and on the mechanisms to reduce the reliance on ratings realized by Credit Rating Agencies in the European market. It aims to draw a picture of the new regulatory framework and to evaluate the consequences for market agents. In a second step, this master's thesis analyses alternatives to credit ratings made by these agencies in order to show investors potential different choices that could help them to determine the credit risk of their investments. Through this two analysis, this master's thesis attempts to determine if the industry still benefits to investors.

Keywords: credit rating agencies, regulations, alternatives.

I.	Table of Content	
II.	Executive summary	6
III.	Introduction	8
IV.	Literature review	10
A.	Presentation of the industry	10
1.	Credit rating industry	10
2.	The use of the external ratings	11
3.	Competition in the market	13
B.	Role of the credit rating industry	15
1.	Informational role	15
2.	Monitoring role	17
3.	Certification role	18
C.	Failure on the market	19
1.	Conflicts of interest	19
a)	Issuer-pays model	20
b)	Rating shopping and rating catering	22
c)	The role of reputation	23
d)	Other conflicts of interest	23
2.	Overdependence on rating	25
3.	Disclosure & transparency	26
4.	Rotation mechanism	28
D.	Remuneration model	28
1.	Issuer-pays model	29
2.	Investor-pays model	30
3.	Skin-in-the-game model	30
4.	Platform or intermediary model	32
5.	Public or non-profit organisation	33
6.	Performance model	33
7.	Cuomo plan	33
8.	Other models and propositions	34
V.	Argumentation and hypotheses	35
A.	Regulation	35
1.	CRA I & CRA II	35
2.	CRA III regulation	37
a)	Competition in the market	38

b) Conflicts of interest	39
c) Rotation mechanism	40
d) Disclosure	41
3. Overreliance mechanisms	42
B. Hypothesis	43
VI. Result.....	45
A. Evidences.....	45
1. Competition and concentration on the market.....	45
a) Barrier entry	47
2. Conflict of interest.....	48
3. Rotation mechanisms.....	50
4. Disclosure	52
5. Overdependence.....	53
6. Main findings.....	55
B. Feasibility of alternatives	56
1. Internal rating assessment.....	56
2. External rating assessment.....	58
a) Market implied ratings.....	58
b) Accounting-based ratings	60
c) Third party assessments (Non commercial): Assessment by Central Banks	61
d) Third party assessments (Commercial): Automated scoring based on computational models	62
3. Dodd frank act	62
4. Main findings.....	64
VII. Conclusion.....	65
VIII. Bibliography.....	68

II. Executive summary

Objectives of the Master's Thesis

This study has two main objectives. First it is to draw a picture of the current regulatory framework of the credit rating industry and to evaluate the impact of the different provisions in order to reach the three objectives determined by the EU, meaning;

- Improve the competition on the market
- Reduce the conflicts of interest
- Improve the disclosure requirements on the financial products

Second, it is to present to investors potential alternatives to credit ratings made by Credit Rating Agencies. It is therefore interesting to put into evidence all the other choices an investor has because the previous regulatory framework used to reinforce the use of these ratings.

Methodology

First, we will develop a literature review about the credit rating industry and the conflicts of interest embedded in this industry. Then, we will explain the different provisions introduced in the newest regulation about the credit rating industry in the European Union. Furthermore, we will analyse several reports publicly available; the Call for Evidence and the Technical Advice on reducing sole and mechanistic reliance on external ratings, both made available by European Securities and Markets Authority, in 2015 and the final report on the state of the credit rating market made available by European Commission in 2016. All of these reports take into account surveys conducted with market agents. And finally, we will analyse the report on the feasibility of alternatives to Credit Rating Agencies made available by the European Commission in order to put into perspective the alternatives investors have to credit ratings made by these agencies.

Results

The impacts of the CRA III regulation on the European market are really mitigated. Agents on the market have different points of view regarding its effectiveness and current improvements

are difficult to notice. However, there are general positive feelings about it on a long term-basis.

Regarding the alternatives, it has been seen that it will be difficult to banish Credit Rating Agencies, however several alternatives could be seen as a complement or substitute.

Therefore, these external ratings should not be automatically chosen to assess the credit risk.

Regulators and investors should be encouraged to use the best alternatives regarding the own needs.

Credit Rating Agencies

III. Introduction

The credit rating industry exists since early 1900s and is originated from the US. The industry has been a major player in the financial markets for years. However, since 2008, the Credit Rating Agencies (CRAs) have been put under great scrutiny because of their implication in the crisis. They failed to predict the drift occurred in 2008 as they have wrongly assessed the potential credit risk of some investments –such as mortgages, debt obligations *etc.* – that, according to some authors (Partnoy, White) led to the financial crisis of 2008.

Previously, the rating given by CRAs were omnipresent in every market deals. Each agent, from regulators to investors, were looking at the ‘opinions’ issued by famous CRAs before making a decision. The exponential importance of CRAs in the market can be explained first by the fact that from 2000s new type of products became increasingly popular. Their complexity had supported the dependence of investors on CRA ratings to reassure their judgements, and second, regulators had given a subsequent importance to CRA ratings including them, or at least from some CRAs, in the regulatory framework embedded to the credit ratings industry. White will describe it as giving ‘force of law’ to some CRAs (2009).. This led the CRAs to diverge from their original purpose – which was solely to give an accurate opinion on the creditworthiness on issuers and their issues. Partnoy had observed a drop in the accuracy of the CRAs’ ratings (1999).

The industry appears as an oligopoly as the 3 main players are sharing about 80% to 95% of the global market before the crisis¹. The ‘Big Three’ – Fitch, Moody’s and Standard & Poor are therefore essentially considered responsible for the critics endured by the industry.

Furthermore, regarding the CRAs’ responsibility, both the European supervisors and the SEC have investigated the role played by CRAs in the financial crisis and both have put into force new regulations. The European regulatory framework will be part of this work. We will analyse the CRA III regulation as well as the overreliance mechanisms. It is shown in the analysis that the results are mitigated. Indeed, even though some of the measures taken

¹ The numbers depend on the source, the timing and the location. Through these numbers we noticed the lectors

received positive feelings from market players, the specific outcomes are hard to evaluate or model to be quantified.

The following part covers alternatives to CRA ratings. According to the findings of this paper, it demonstrates that regulators and market participants should not only rely on CRA ratings, and look at other methods. However, alternatives can be rather complex compared with the general knowledge of market agents. As a consequence, banishing entirely CRA from the markets is not a rational solution but rather keeping a hard and strong regulation upon them. CRAs have a major role in the financial market in terms of reducing the information gap and providing information to monitor borrowers/investments.

This document attempts to provide firstly a perspective of the most recent regulations on the CRA industry in Europe and secondly to compare alternatives to evaluate credit risk. It allows investors to have, first, a clear idea about the newest regulations and their current impacts as well as the feelings market agents have on these regulations and second to determine the different alternatives investors could consider in order to evaluate the credit risk on their investment in complement or as a substitute to CRA ratings.

This paper is structured as followed; in the Second Part, three different parts can be distinguished. First, we will give an overview of the credit rating industry and we will describe the role of CRAs in our financial system. Then, we will analyse the most important critics of the industry and its failure. This part is an introduction to the improvement realized in the regulation post crisis. Finally, we will discuss all the different models that are already present in the literature. It is several models that CRAs could adopt instead of the most common issuer-pays model – it will be explained in more detail further. As the European Union (EU) did not attempt to force CRAs to change the type of remuneration, we will not present all advantages and disadvantages of them, we will simply explain them in order to draw in mind that different models exist. In the Third Part, we will continue with the regulation put into force since 2008. We will present the regulatory framework – focus on CRA III regulation – that has been introduced in 2013 as well as the different mechanisms that aim to reduce the overreliance of market participants on CRA ratings. In the Fourth Part, we will divide it in two parts; first, we will show and analyse the different results from three different surveys run by EU in order to assess the impact of the new regulation on the market. And finally, we will evaluate the different alternatives to CRA ratings in order to try to draw a conclusion on the viability on the credit rating industry.

IV. Literature review

A. Presentation of the industry

1. Credit rating industry

CRA are institutions that are privately run to assess credit risk of borrowers – that can be a financial or non financial firm as well as a government – the grade given by the CRA is considered as “*an opinion regarding the creditworthiness of an entity, a debt or financial obligation, debt security, preferred share or other financial instrument, or of an issuer of such a debt or financial obligation, debt security, preferred share or other financial instrument, issued using an established and defined ranking system of rating categories*” (Amtenbrink et al., 2011, p.3). It has to be pointed out that only the credit risk is evaluated and not any other risks as market or operating risk. Rating agencies provide then credit information and distribute it to market participants².

Historically, CRA have mostly rated two different issues, corporation bonds and government bond. Their importance and influence in our financial system have increased during the years and more specifically for the past twenty to twenty-five years. In the 2000s, CRA started to rate structured finance instruments that became more and more popular and were presenting huge potential profits (White, spring 2010). Nowadays, and more precisely before the crisis 2008, ratings are involved in every decision taken in the financial market.

Many studies have been conducted in order to find any existing correlation with credit ratings. In the 80s, Liu and Thakor (1984) and Ederington, Yawitz and Roberts (1984, 1987) have found a correlation between the ratings and the yield spreads, meaning that credit risk is related to the ratings. Later, the literature, Cornell, Landsman, & Shapiro (1989), Hand, Holthausen, & Leftwich (1992), Goh & Ederington (1993) and Kigsen (2002), sought the impact of a change in rating on the stock price. It had been found that a downgrade would affect negatively the stock price, however, such relation in case of upgrading has not been found. In the 2000s, the uses of the rating had exponentially exploded because of the

² Throughout this study, ‘market participants’ refers to all investors regardless its specific type. It is all institutions or individual that invests into rated investments.

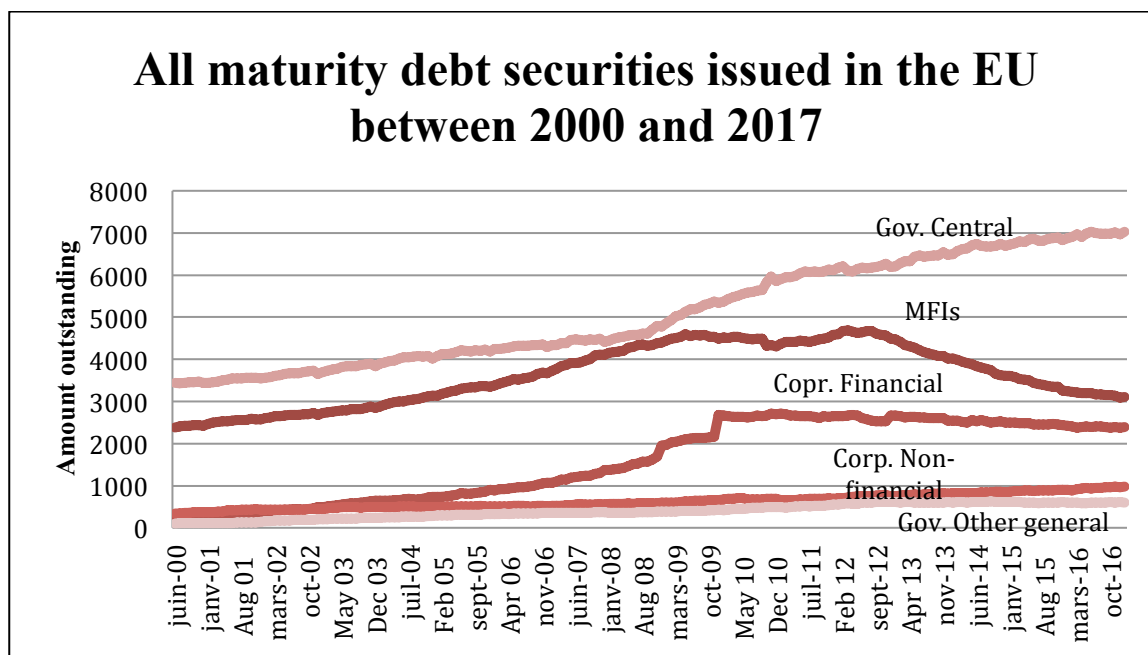
complexity of financial instruments and the globalization. It has lead market participants to rely even more on CRAs (Frost, 2006).

CRAs' usefulness can be found in a specific issue of finance, indeed, as White underlined: *"How do lenders determine the creditworthiness of potential borrowers and assure themselves of the continued soundness of borrowers after a loan has been extended?"* (2001, p. 4). It is therefore investors – the general public – that cannot actually correctly assess the creditworthiness of borrowers that find the needs in the existence of CRA. In addition, specialist lenders – such as bank, pension funds, finance companies – may also need the help of these specific CRAs as the actual borrowers became more and more difficult to assess and they have found useful to outsource this part of their activity (White, 2010).

2. The use of the external ratings

Market participants and other players on the market such as issuers or regulators have been using the external ratings exponentially for the period pre-crisis. It can be linked first to the number of issues that constantly increased and the outset of new complex financial products. In addition, as already stated above, the supervisors have been using the external ratings for a regulatory purpose, increasing their importance on the financial market. It can be seen from the figure 1 below that the number of debt issued in the EU has considerably increased from 2000 to 2008/2009. Then it has remained steady or it has slightly decreased depending on the issuer. It can be seen as well that the debt issued by Monetary Funds Institutions (MFIs) has the most decreased due to the deleveraging in the financial sector.

Figure 1: Comparison of the evolution of debt securities issues between 2000 and 2016

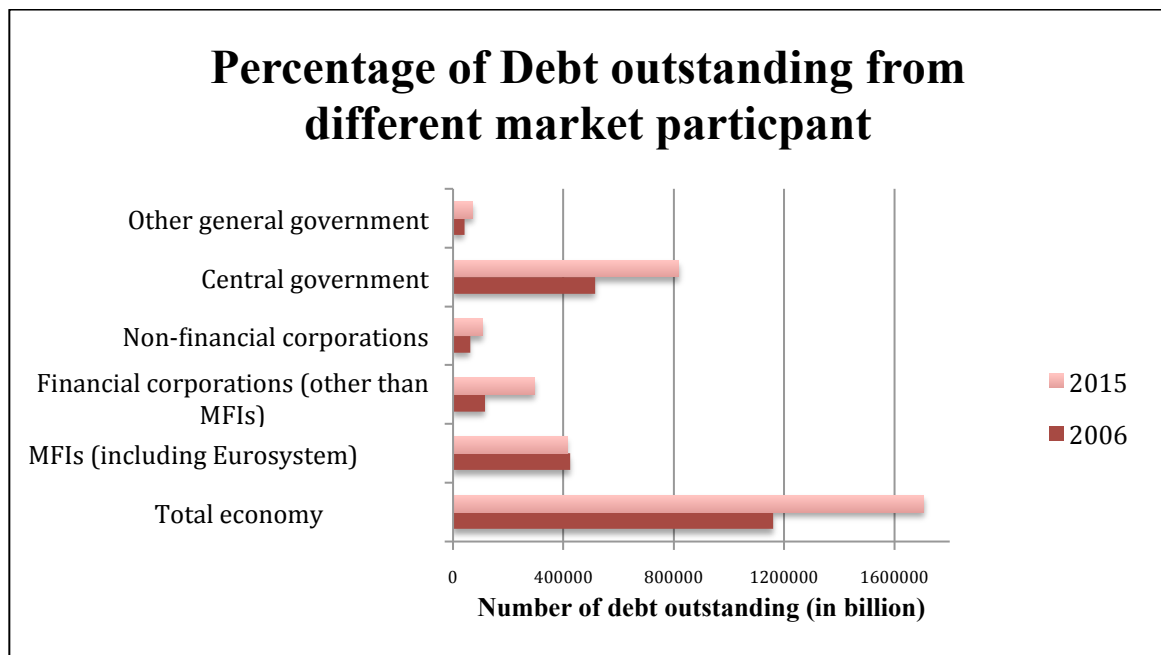


Source ECB

It can be seen from the graph below (figure 2) that the percentage of debt issued by Monetary financial institutions (MFIs)³ compared to the total amount issued have sharply decreased between 2006 and 2015. It is due to the new political measure taken on the market (ESMA). It is the financial corporations that issue a bigger part of the total amount compared to both years analysed, while the percentages of the three other institutions stayed more or less the same.

Figure 2: Percentage of debt outstanding in 2006 and 2015

³ "MFIs are resident credit institutions as defined in European Union (EU) law, and other resident financial institutions whose business is to receive deposits and/or close substitutes for deposits from entities other than MFIs and, for their own account (at least in economic terms), to grant credits and/or make investments in securities." (ECB, n.d.)



Source ECB

The external ratings played a major role in the sovereign debt as well, however, it is beyond the scope of this analysis and therefore we will not develop it.

Another part of the use of the external ratings is played in the structured finance market, which, as already said, represents the biggest part of the financial market and the biggest part of the revenue of CRAs.

3. Competition in the market

The credit rating market is dominated by three main agencies – the so-called big Three, Standard&Poor (S&P), Moody's and Fitch, are sharing roughly about 95% of the EU or US market shares. The market can be described as an oligopoly. In pure economical theories, such situation can never bring an ideal situation leading to an optimal equilibrium (Mankiw & Taylor, 2011).

However, in the credit rating market, Camanho et al. have explained two potential effect of the competitiveness (2011) In the one hand, a high number of CRAs and potential new entrants may increase the quality provided and therefore improve the efficiency on the market, however, on the other hand it may also lead to potential conflicts of interest and push CRAs to inflate the ratings in order to gain or keep market shares. The market efficiency will therefore depend on the choice of the CRAs either to provide accurate and valuable

information to the market or to produce ratings that will reply to issuers' needs. Mathis, McAdreus & Rochet used different term to describe the same outcome. *"The CRA can be of two types: either it is fully committed to always tell the truth or it is opportunistic"* (2009, p. 3).

Becker studied the impact of the entrance of Fitch on the market and he has found that its entrance on the market concurs with lower quality ratings from the CRAs. In his conclusion, he found that the predictability of default of the models was decreasing and the relationship between the credit risk and the yield was going down as well (2011). The competition on the market had there decreased the value of the CRAs on the financial market. Bolton came to similar results in his models. He analyses different situations and he came to the point that a monopoly market of the credit ratings industry will be more efficient than a duopoly as this one leads to higher opportunities for the issuers to do their 'shopping' and therefore dupe too trusting investors (2012). The competitiveness seems to provide lower accurate information, however, Bar-Isaac argue that point. According to him, the market efficiency in the credit rating industry can indeed decrease while the number of firms increase but once a threshold is reached the information provided by CRAs will be more accurate and valuable for investors (2005).

According to the literature, the reputation on the market is playing a major role in regard with the sound competitiveness. Carmanho et al. discussed that if new entrants on the market will be perceived has providing high quality information, market competitors will be obliged to adapt their quality in order to keep their market shares. The competition on the market will be then positive. However, in practice, new entrants do not have such reputation and it is usually even lower than already well-established firms in the industry. Thus, firms can drive out the competition easily by inflating the ratings in order to capture any market shares the new entrants could have possibility reached. It leads to a vicious circle, as new entrants do not have the choice to practice inflated rating as well in order to survive in the industry. Evidences of both cases have been found in the market in Doherty et al. (2012) and Bae et al (2013).

The entrance of Fitch, currently third biggest CRA in the market, confirms the hypothesis of Carmanho et al. (2011) as already mentioned above (Becker & Milbourn, 2011).

B. Role of the credit rating industry

1. Informational role

This first problem that is emphasised above is the asymmetry of information between financial market's participants. Lenders do not have the exact same information that borrowers and this lack of information leads to uncertainty. Akerlof explained the concept of asymmetric information by using the used-car market; as the buyers do not know the quality of the car the sellers are offering, the buyers are not willing to pay any difference for a good or bad car, therefore, the sellers of good quality cars will not offer anything on the market as they will be driven out by bad quality products (1970). He concluded that four responses – the so called “counteracting institutions” – could reduce the gap of information between the market's participants. The first institution is the guarantees. Indeed, it can ensure the buyers of an expected quality. The second one that can reduce the effect of quality uncertainty is the brand name. It seems easier to have someone to blame in case the quality expected does not fit what it was supposed to be. The third institutions that counteract are the chains and have a similar effect than brand name. And finally, the last institutions are the licencing practices that also reduce the uncertainty (1970). The first CRAs' goal can be therefore found as acting as counteracting institution. Indeed, *“the difficulty of distinguishing good quality from bad is inherent in the business world; this may indeed explain many economic institutions [as CRAs] and may in fact be one of the more important aspects of uncertainty”* (Akerlof, 1970).

The importance of CRAs is to reduce the gap of information by providing an opinion on the creditworthiness of the borrowers, which reduce the gap of information between both sides of the market.

The first role of CRAs is therefore very valuable for investors, as not all investors can assess correctly the credit risk and, in addition, it is a long and costly process even for more sophisticated investors.

A second role of CRAs is played in terms of market efficiency, which it is inherent to the first role explained above. Indeed, providing ratings to investors help to put every lender on the equal footing, several authors have concluded that ratings are playing a role in the improvement of the market efficiency and it comes directly with the reduction of the information asymmetries (Adelson, 2012). In assessing borrowers' credit risk, CRAs have a crucial role to determine the interest rate borrowers have to pay (Liu and Thakor, 1984), safer the investment/borrower is evaluated; lower the interest rate is. In relation to the Akerlof's theory of 1970, low interest rate inform investor of the good quality investment and higher

interest rate shows the opposite. It makes borrowers to desire high and good grades, as it will lead to a lower cost of borrowing. Indeed, high-graded security will encourage people to buy it and therefore it will increase its price and reducing the yield attached to these securities, the borrower will be then able to borrow more and at a lower cost (Amtenbrink et al., 2011)..

Credit ratings are expressed as a scale; another role of the CRAs is therefore to provide a ranking of borrowers (Deb et al, 2011). Among the Big Three, S&P scale goes from AAA (lower risk of default), AA, A, BBB, ... to D. Moody's or Fitch uses a different scale but it is basically the same, only the notation is different (figure 3). As said, the grades are rated in regard with the CRA' opinion on the credit default of the borrower, however, it happens that CRAs have different opinions. Alsakka and ap Gwilym have studied the difference between the grades given by the Big Three and they have come to find evidence that the difference is more likely to be found for the sovereign ratings (2010). According to Amtenbrink et al., three reasons can explain these disagreements (2011). Firstly, the CRAs are not similarly weighting the factors of their assessing models, secondly, the speculation on the market may be a cause of disagreement and finally, the agencies can give a better grade to companies that are from their 'home region'. Güttler and Wahrenburg argue this hypothesis as they have found that, at least, Moody's and S&P's ratings of 'home companies' do not depend on home preference (2007).

Figure 3: scale of external CRAs rating

Fitch	S&P	Moody's	Rating grade description (Moody's)	
AAA	AAA	Aaa	Investment grade	Minimal credit risk
AA+	AA+	Aa1		Very low credit risk
AA	AA	Aa2		
AA-	AA-	Aa3		Low credit risk
A+	A+	A1		
A	A	A2		
A-	A-	A3		
BBB+	BBB+	Baa1		Moderate credit risk
BBB	BBB	Baa2		
BBB-	BBB-	Baa3		
BB+	BB+	Ba1	Speculative grade	Substantial credit risk
BB	BB	Ba2		High credit risk
BB-	BB-	Ba3		
B+	B+	B1		
B	B	B2		Very high credit risk
B-	B-	B3		
CCC+	CCC+	Caa1		
CCC	CCC	Caa2		In or near default, with possibility of recovery
CCC-	CCC-	Caa3		
CC	CC	Ca	In default, with little chance of recovery	
C	C			
DDD	SD	C		
DD	D			
D				

Source cnb

Basically, all these roles explained above are informational; the first aspect of the CRAs is to provide valuable information to market's participants (Partnoy, 1999). The investors are using the information provided in their investment decisions. As this information is used before the actual transaction, we can say that CRAs try to prevent any adverse selection in the financial market.

2. Monitoring role

The second aspect of CRAs is more in term of monitoring borrowers – the other part of the asymmetric information that comes after the transaction. As lenders face the risk that the borrowers take part in unwanted actions that will reduce the probability of payback, investors want to monitor their investments (Mishkin, 2007). CRAs have therefore put in place procedures that consist in improving the investment monitoring. These procedures prevent

borrowers before any downgrade, the agencies use the so-called ‘outlooks’ or reviews rating – called ‘watchlists’ (Amttenbrink et al., 2011). It is two procedures that deliver accurate and stable information for the investors’ needs. Outlooks are considered as a change of opinion on a medium term, usually between twelve to eighteen months, while watchlists are more focused to prevent shorter change, around 100 days (Bannier & Hirsch, 2009). The introduction of the ‘outlooks’ and ‘watchlists’ can be explained by two reasons (Amttenbrink et al., 2011). The first one is the need of accurate information regarding the real credit risk of the borrower. In addition, as the time is playing a major role in the investments decision, it is important to have the most update information while investing. The ‘outlooks’ and ‘watchlists’ procedures found therefore their usefulness in providing correct and appropriate information. The second one can be explained by the implicit contract created by these procedures. Indeed, empirical data have been found and implies that these procedures allow rating agencies to put pressure on the reviewed company to prevent borrowers to undertake risky actions that may lead to a procedure of downgrading. Creating then a form of monitoring (Boot, Milbourn, and Schmeits, 2006). The research conducted by Bannier & Hirsch validates the results of Boot et al. and they concluded that it was even a stronger mean of monitoring for low-quality borrower (2009). Fridson brought another point of view in regards with the monitoring of the investment, indeed, CRAs allow also finance entities’ shareholders to ensure about the investment made by their own agents, reducing therefore the agency problem in a financial firm. Indeed, it monitors the agents’ behaviour by limiting the investment regarding the grade given by CRAs (quote by White, 2001).

In brief, CRAs provide two services; the first one is the ‘information service’ which reduce the information cost that is implied to lender in order to assess borrowers quality and the second one that can be called ‘monitoring service’ (Amttenbrink et al., 2011).

3. Certification role

A third aspect of the CRAs is put into evidence by the literature. It is the so-called certification role of ratings. Deb et al. explained that ratings are used “*to distinguish between securities with different risk characteristics, and to specify terms and conditions in financial contracts*” (2011, p. 5). It means that CRAs are integral part of the market practices. Deb et al. use the word ‘hardwired’ to define the CRAs’ role of certification (2011). According to them, it is first an additional mean to monitor lenders’ investments, as Fridson explained; it allows

investors to be sure that managers who invest their money align on their objectives and not themselves (2011). More specifically regarding the third role of CRAs, it can be seen that ratings have been used for a regulatory mean. In 2009, The Joint Forum has emphasized five main uses of CRAs' ratings under Basel II, among them the role played by CRAs to determine the net regulatory capital for bank, securities firms and insurance companies is the most powerful one (Deb et al., 2011). In the United States (US), the Securities and Exchange Commission (SEC) has promoted some CRAs as Nationally Recognised Statistical Rating Organisations (NRSROs) in order to be qualified in the regulatory capital attribution. The level of the minimum capital that had to be put aside was related to ratings given by the NRSROs. However, it had led some firms to be forced to use the opinion of these third party agencies. White in one of his work refers that "*the creditworthiness judgments of these third-party raters* [he emphasizes the implication of the big three, more S&P and Moody's] *had attained the force of law*" (2010, p. 213). The regulation pre crisis 2008 will be one of the main critics that have left CRAs be involved in the collapse of the financial market.

In sum, the CRAs fulfil three main roles. The first one is informational and it improves the diffusion of information to market participants in order to have a more efficient financial market. The second one is in terms of monitoring and it helps investors to control their investments once the deal is made. It improves the market efficiency as well, as it reassures investors about the uncertainty once the money has been invested. And finally, the third one is related to the regulatory framework of the financial market and more specifically to the attribution of the minimum regulatory capital.

C. Failure on the market

1. Conflicts of interest

Different conflicts of interest arise from the credit rating industry. Bolton identified three of them (2011). According to him, CRAs have incentives to minimize the credit risk of their potential customer in order to increase their market shares. In addition, the credit ratings markets is structured as the issuers can pay for a wanted ratings – this problem is described in the literature as the 'ratings shopping' – and finally, it is the over-trust of investors on credit ratings – the overdependence on ratings – that push CRAs to act like this.

We will develop in the section below different conflicts of interest that the credit rating industry faces.

a) Issuer-pays model

According to many authors⁴, the shift in the CRAs business model had been a major factor that had preceded 2000s events. In the beginning of the 70s, the CRAs have shifted their investor-pays business model to issuer-pays; the potential reasons and the business model will be explained in greater extent further.

The potential conflict of interest here is raised between the issuer and the CRAs, as it is the issuer who is going to be evaluated that pays the CRAs. The CRAs have therefore incentives to satisfy their customer in order to maintain or gain market shares. On the one hand, Bahena explained that once a financial product is rated, the issuer has the choice to release the grade given or not and it is only if it is released that the CRAs is paid (2010). It is therefore clear that CRAs have incentive to give a wanted and better grade instead of providing more accurate information for investors. On the other hand, Covitz & Harrison did not find such evidence in their research, according to them, CRAs are too aware about reputational costs and therefore, on the contrary, it seems actually that CRAs defend more the interest of investors than issuers⁵ (2003). Not all the literature agree with that findings as it is shown in OECD that CRAs could have tried to satisfy the issuers' needs by executing lower due diligence in their assessing procedures. They added, that investment bank were responsible as well, as *“both the underwriters [investment banks] and the rating agencies tolerated a wilful blindness to the decline in creditworthiness”* (2010).

Nevertheless, it has to be pointed out that during about thirty-five years (from 1970 to 2007/8), the new business model did not create that many troubles. Indeed, before 2000s, CRAs have made some mistakes in assessing the credit risk (Eron, Asian crisis, ect), however, it had never implied a worldwide financial crisis and the impacts had been limited. White believes that this is mainly because market participants did not believe it came from intentional misconducts (2010).

⁴ Partnoy in 2009, Utzig in 2010, Pagano in 2010...

⁵ They have not concluded that there is not any conflict of interest that occurs in the market. As, not every situation has been tested in their paper.

Nonetheless, in the 2000s, new elements came to change the shape of the financial system. First complex structured instruments as CDO (collateralized debt obligations) and MBS (mortgage backed securities) – generalisation of every structured investment vehicles – have been created. These instruments are the main focus of the literature after the financial crisis when they are studying the implication of the CRAs in the crisis– Crotty (2008), Skreta & Veldkamp (2008) or He, Quian & Strahan (2012). Indeed, it has shaped a more attractive environment to produce inflated ratings.

Firstly, only a few financial institutions were creating CDO and MBS products, thus, CRAs were more willing to give higher grade to these types of products in order to try to get these customers back (Bahena, 2010).

Secondly, these financial products were more complex and the errors in ratings could not been spotted by market participants as easily as plain vanilla bonds (White, 2010). Raifalov pointed out the lack of alternative assessments to ratings. Indeed, it is difficult to compare them with another measure, as the information is more difficult to find or analyse (2011).

Thirdly, the revenues generated by these structured products were way higher than the ‘normal’ financial product. *“It is not especially surprising that a tight, protected oligopoly might become lazy and complacent. The conflicts of the issuer pays model and the special characteristics of rating these mortgage securitizations combined to create irresistible temptations to provide initial ratings that were excessively optimistic, especially for the securities that were rated in 2005 and 2006”* (White, 2010, p. 17). Moreover, according to Smith, these new products have created a sharp increase in the demand for ratings, which it has increased the potential income and therefore increase competition on the rating industry – and potentially inflated ratings to increase market share (2002)⁶.

Finally, it has to be noticed that the issuer-pays model’s conflict of interest can arise on two levels. The first one is subject to the CRAs and it is discussed above. On the other hand, it can also come from people who are working directly for the CRAs and are therefore approving the ratings. Indeed, the satisfaction of their clients can bring them careers advancement and if the remuneration is linked to the revenue of the CRA, they will have higher incentives to accommodate issuers’ needs and produce biased ratings (Chan, Karceski & Lakonishok, 2007).

⁶ The competition on the market is discussed on the previous section and it has been seen that positive or negative element can come out of it. However, in an oligopoly as the credit rating market, it is mainly found that increasing competition is too low in order to avoid the phenomena of inflated ratings.

b) Rating shopping and rating catering

Griffin, Nickerson & Tang studied which of the ‘rating shopping’ or ‘rating catering’ can better described the CRAs implication in the structured market (more especially CDO) that has lead to the credit crisis (2013).

The ‘rating shopping’ “refers to a situation where issuers solicit ratings from multiple agencies and then choose the most favourable ones “*as modelled by Skreta and Veldkamp (2009), Faure-Grimaud, Peyrache, and Quesada (2009), and Farhi, Lerner, and Tirole (2011)*” (Griffin et al., 2013, p. 1). ‘Rating shopping’ does not imply that CRAs assess non-accurate ratings; it does just mean that the issuers go to several CRAs in order to use the most preferable one for him. As it is already explained above, the issuer has the choice to release the grade given or not, thus, in case the grade given does not satisfy to the expectation of the issuer, he can ask for another assessment to another CRA (Bahena, 2010).

The ‘rating catering’ is when CRAs do not stick to their standards of their credit assessment procedures in order to increase their market shares and therefore prefer to accommodate to issuers’ needs instead of producing accurate information (Griffin et al, 2013). Rating catering involves the rating shopping and it is amplified by the competition (Bolton et al, 2012).

Griffin et al. shows that AAA CDO that were rated by both, Moody’s and S&P, have defaulted more than AAA CDO that were rated by only one of them (2013). Such evidences are in favour of ‘rating catering’, as CRAs response to the competitive pressure by offering biased grades.

As already discussed in the previous section, the structure of the credit market, regarding the bid and ask side, could create incentives to negatively affect the behaviours of market participants and it can be strengthen in the pre-crisis complex financial market. He et al. have studied the impact of the issuers’ side on the rating catering (2012). They compare ex ante credit quality yield of tranches sold either by small or large issuers and concluded that investors actually suspected that CRAs were engaged in ‘rating catering’ and were given higher grades for larger issuers. Thus, “*yields on tranches sold by large issuers were higher conditional on the credit rating and other controls*” (He et al. 2012, p. 2136). They analysed as well that the performance of the MBS’ is negatively correlated as tranches sold by large issuers underperformed similar tranches sold by small issuers from 2004 to 2006 (2012).

However, investors are not sophisticated enough in order to allocate properly the risk related to this misevaluation. Even though, evidences show that investors were aware about this ‘shopping catering’. In other words, the insufficient knowledge does not allow investors to solve the conflict of interest that results from issuer’s side (He et al., 2012).

c) The role of reputation

It is said that the impact of conflicts of interest is often mitigated by the reputation costs linked to the credit rating industry. It is considered as an incentive not to take advantage of the situation and therefore prevailing accuracy to profit. Mathis, McAndrews and Rochet show that the argument holds only if the main CRAs revenues come from other products than the complex instrument such as CDO or MBS (2008). Otherwise, they found evidences that CRAs will be always producing too positive ratings once the reputation is already good enough. They will only try to get the confidence back when they have faced a crisis of reputation linked to a wrong rating. Eling and Hau had come to the same results regarding the insufficiency of the reputational costs in order to discipline CRAs. Despite that, Dittrich noticed that the credit rating market was probably already one of the most watched markets and therefore the incentives to take advantage of the conflicts of interest present in the market were globally quite low (2007).

d) Other conflicts of interest

(1) Conflict of interest between CRAs and shareholders

The problem here is directly linked with the owners of the CRAs. Indeed, it has to be point out that the shareholders who own CRAs are most of the time involved in the financial market. Therefore CRA’s assessment procedures could be biased in order to fit with shareholders expectations in term of investment or profit. Kedia, Rajgopal and Zhou studied how Moody’s ratings have been influenced by its IPO in 2000 compared to its main competitor, S&P that have not undergone any change in its ownership during that period (2013). They found “*significant evidence, both in economic and statistical terms, that Moody’s was more likely to assign favorable ratings relative to S&P for new corporate bond issues in the period after its IPO*” (2013, p. 39).

(2) Advisory service and CRAs location

Another conflict of interest started when CRAs began to provide an advisory service to companies, which wanted to improve their ratings. Such service could therefore lead to an attempt to inflate the rate given as paying for this advisory service. CRAs justified it by dedicating two different teams for the process of rating assessment and the advisory service. However, a 2007 study of the SEC found some problems in such procedure and the effort to avoid the conflict (Bahena, 2010).

Moreover, the US dominance in the ratings industry created another concern about CRAs. Indeed, the ratings assessment process could be biased worldwide as companies would have to be conformed to US business ideal practices. The location of the firms could therefore be another problem that creates inflated ratings (Bahena, 2010).

(3) Revolving doors

It can be noticed that there is another conflict of interest that arises for the analysts who work for the CRAs. Indeed, these analysts are potentially eligible for working for firms they are rating. This problem is known in the literature as the ‘revolving door’ problem.⁷ Cornaggia, Cornaggia & Xia have analysed this problem on Wall Street in order to study how ratings could be influenced by analysts who are thinking about working for the issuer they are rating (2014). It results from the analysis that grades could be inflated and it is stronger if the issuer is part of a very lucrative industry such as investment banking.

⁷ The problem can be defined as follows and it can be applied between credit rating industry and any industry that is using CRAs in order to rate their issue; “A revolving door is the movement of high-level employees from public sector jobs to private sector jobs and vice versa. The idea is that there is a revolving door between the two sectors as many legislators and regulators become consultants for the industries they once regulated and some private industry heads receive government appointments that relate to their former private posts.” (Investopedia, n.d.)

2. Overdependence on rating

The overdependence on the rating is subject to many researches in the literature because of the negative effect it has on the financial market. In 1999,⁸ Partnoy point out the so-called credit ratings paradox that can be described as followed; on the one hand, the role of the CRAs, discussed in the previous section, is valuable and important for the financial system. However, on the other hand, the evidences show that the accuracy of the information given by CRAs has decreased since the mid-1970. According to Partnoy, the first indication about CRAs' importance decline is the several defaults in assessing the credit risk and the unexpected downgrades done too quickly. In his researches of 1999, he concluded that CRAs have been able to exist for that long because they have been granted to sell 'regulatory licenses'⁹ and it is not due to the fact that they have produced accurate information. His main critic on the credit ratings industry is therefore the power given to the CRAs. White has described this power as the 'force of law' (2010). Indeed, in 1975, the SEC has been promoting seven¹⁰ agencies as National Recognized Statistical Rating Organization (NRSRO) (SEC, 1994).

It starts when banks, insurance companies and pension funds' regulators used credit ratings provided by CRAs, a third party, as an 'official' ratings to determine the credit risk – and furthermore the regulatory capital requirement – of the institutions related to their industry. In 1975, it has been officialised when the SEC uses the ratings of rating agencies, recently promoted NRSRO, as measure of the bonds' credit risk. The SEC had to promote some CRAs, as it was difficult for them to recognize the real value of these ratings. Thus, the SEC had been able to justify the use of these external ratings. Indirectly, it gave CRAs, recently promoted, such importance as they were henceforth providing official and sufficient grades in order to evaluate the credit risk. These nationally recognized agencies have then become the only valuable agencies on the market, increasing the entry barrier cost on the credit rating market and creating a higher reliance on CRAs' ratings (White, 2010).

⁸ Partnoy had written further explanation about the credit ratings paradox in his paper titled 'The paradox of credit ratings' in 2002. In this paper, Partnoy is proposing solutions to this paradox, as he believes it has perverted the role and importance of the CRAs in the financial system.

⁹ It is a notion that Partnoy is using to describe the fact that private entity are permit to sell valuable property rights instead of the regulator. In other words, it is a private entity with its own objectives that is doing what the regulator is supposed to do.

¹⁰ Originally, only six agencies have been granted by the recognition, the seventh agency has been recognized later in 1983 (SEC, 1994)

Partnoy concluded that allowing CRAs to hold that much power have created an overreliance on credit ratings. And it has blinded market participants to analyse how big the speculation on MBS had spread before the crisis blew up. However, he did not find enough evidences, even though many arguments may go in that direction, which could hold CRAs direct responsible for the crisis. It is only the investors' blind-dependence, helped by the regulation, on credit ratings that allow such drift (2009). He added that without the ratings, the transaction on CDO and MBS would not have happened. As without the possibility of getting high grades, the interest in these two financial products would have been much lower and therefore the crisis might have been avoided; *"Without that appetite [in CDO and MBS], there would have been little pressure leading to the proliferation of sub-prime mortgages, because those mortgages could not have been offloaded through "second-level" securitizations. Without the proliferation of low quality mortgages, there would not have been a dramatic housing market rise and fall, with the attendant ripple effects"* (Partnoy, 2009, p. 21).

Mulligan found similar evidences (2009). He concluded that *"In general, investors have stored a great deal of faith in the ratings produced by the three largest credit rating agencies, and this trust largely has been validated by the SEC's similar reliance on the ratings of designated agencies in its regulatory constructions"* (2009, pp. 1304 – 1305). In order to avoid such dependence, Mulligan proposed a self-regulatory organization monitored by the SEC. Lang and Jagtiani specified that this reliance was amplified by the complexity of assessing the credit risk of structured products such as CDO or MBS (2010). It is also clear for the literature that market participants relied too much on mathematical or statistical models proposed by CRAs in order to assess the credit –Schwarcz (2009) and Lang & Jagtiani (2010).

3. Disclosure & transparency

Credit rating activity's lack of transparency as well as the lack of accountability following the crisis was two of the main reasons for their implication. The literature is therefore discussing the effect of the disclosure requirement regarding the issuers' sides and CRAs' side.

Avgouleas discussed that the crisis would not have been avoided with higher disclosure requirements, as they were already, according to him, quite broad. Moreover, higher

disclosure requirements would not have allowed market participants to better understand the complexity of the risks present in the market and regarding the boom period it was preceding the crisis, investors would not have paid higher attention to these additional disclosures measure as the confidence in the ratings will have prevailed (2009). In other words, the behaviour of the market participants would not have been influenced by higher disclosure requirement.

Pagano and Volpin argue that issuers may benefit from the lack of transparency, as some investors are unsophisticated and cannot deal with all the information a full transparency rule would have imposed (2010). Indeed, in case a rule of full transparency was introduced, the detailed information provided would increase the liquidity of the secondary market as well as the price for these securities. However, it will create an unfair competition between investors who can use the detailed information and those who cannot. Sophisticated investors would be able to invest in high quality products they have spotted due to the information provided and unsophisticated investors would have all the leftover investments. Knowing that, unsophisticated investors would invest at a discount forcing issuers to under-price their products in order to be able to reach these investors. Therefore, to avoid such situation, issuers rather to provide little information in order to assess the credit risk of their products. Pagano and Volpin described the situation very well; *“they [issuers] have the incentive to keep their ratings rather uninformative, so as to facilitate the marketing of structured debt to a clientele that includes relatively unsophisticated investors”* (Pagano & Volpin, 2010, p. 2).

Pagano and Volpin defend that only a certain level of disclosure requirement may benefit to the market and too high requirement will not.

On the CRAs side, Pagano and Volpin argue the same idea for the disclosure requirements (2010). Indeed, according to them, too much transparency will favourite sophisticated investors who would have the expertise and time to analyse and understand it. In addition, they add that too much transparency will benefit issuers in the way they will be able to determine the rating their issue will be granted and therefore they will be able to structure their product in order to have the grade wanted.

In sum the literature is not too much in favour of too high transparency and disclosure however, too low could in the same way hurt the efficiency of the market.

4. Rotation mechanism

The rotation mechanism is quite recent regulation, thus, the scope of the literature is not that large on that matter. Therefore, we will just notice that Boylan analysed how rotations mechanism rules between CRAs and issuers could reduce the conflict of interest linked to the issuer-pays model (2011). In addition, for more information about rotation mechanism a parallel could be done with the audit industry that has a much broader literature regarding the rotation mechanism. Indeed, in some way, both industries have comparable role (Boylan, 2011).

D. Remuneration model

The business model that is currently the most commonly used is the issuer-paid model (ESMA, 2015). It has been implemented in the early 70s and it has replaced the previous model – investor-paid model. It is first Moody's and Fitch, followed by S&P, which have changed their business model. As these three firms account for about 80% of share market, it can be said that it changed dramatically the way the industry of the credit ratings were structured. Even though, not all CRAs have shifted to this issuer-paid business model, it is clearly the most common source of revenues (Deb & Murphy. 2009).

In the previous model, investor who wanted to know more about the creditworthiness of a bond had to pay for the information, while, in the issuer-paid model, it is the bonds' issuer that pays the CRA to be rated (White, Spring 2010).

The explanations for such a change have never been officially published by any CRAs, however, the literature tried to deduct possible reasons.

First, the years 70s represent the period of great improvement in terms of technologies and the photocopy industry is among them. It allows, at that time, much faster and less expensive photocopies than before. CRAs were therefore afraid of free riding consequences of the 'investor pays' model. Indeed, they thought investors would have greater and easier access of the confidential information they were providing to the customers who paid for it, although the 'issuer pays' model will not suffer from this problem (White, 2010). However, according to Smith, it would have been possible for CRAs to limit the potential damage of the free riding by engaging in technical and legal ways (2002).

Second, Fridson advanced that, in 1970, the Penn-Central Railroad bankruptcy surprised the markets and it had put issuers to be willing to pay to assess their bonds (quoted by White, 2010). A survey of 2000 concluded the same; *“Issuers think they need more ratings in order to ensure a “true” valuation in the marketplace, while institutional investors want fewer ratings to ease portfolio decision-making in the light of their own sophisticated internal credit analyses i.e., using agency ratings only as additional inputs to internal evaluation and for “certification” purposes”* (quoted by Smith, 2002, p. 21). However, White rightly comments this argument by putting into evidence that investors would have been even more willing to pay for accurate information especially if this bankruptcy was really unexpected. Moreover, he highlighted that market participants should not have kept to believe in the valuating information given by CRAs if they were wrong on the credit rating given to the company (White, 2010).

Third, CRAs had come to realize that their ratings were mainly used by issuers to sell their bonds to borrowers at the right price. CRAs therefore deducted that issuers would be willing to pay in order to have access to it, which provides another source of income (White, 2010).

Fourth, as the credit rating industry could be considered as an information business, CRAs understood that the payment could come from both sides of the market without really paying attention to whom is paying (White, 2010).

1. Issuer-pays model

The issuer-paid model is a central point of the conflicts of interest that CRAs are blamed for and it is broadly discussed in the literature. It has been discussed above in the previous section. However, it is not just with drawbacks. One of the advantages of this model is that the information provided by CRAs is henceforth free for investors; thus, it limits the advantage of investors that would have been willing to pay to get information. In addition, since it is issuers who have to pay to see their products rated, it may increase the incentive to provide information to CRAs in order to be rightly assessed. The information in the market will therefore increase (Fennell & Medvedev, 2011). The second advantage is that it encourages issuers and CRAs to create a longer relationship. It may lead to more accurate ratings, as issuers will be more willing to provide valuable information. Another positive point of the issuer-paid model is that it avoids any free riding. Indeed, as explained above, the

investor-paid model allows more easily to share the information acquire from CRAs (White, Spring 2010).

2. Investor-pays model

The investor-paid model is based on a remuneration that comes from the other side of the market. Its viability is not put into question by the literature as it has continued to exist, even after most of the CRAs have shifted their business model (Fennell et al., 2011). In theory, this model should solve the conflicts of interest that are present in the issuer-pays model, as investors will be looking for the higher quality ratings. The model is however easier to maintain in a smaller market or niche as the free riding problem it implies is more manageable (Deb & Murphy, 2009 and Fennell & Medvedev, 2011). Its main advantages are therefore the higher quality it may provide and the fact that it involved a direct relationship between CRAs and investors – the demand part of the market. It will then cover in a more efficient way what the market is asking for. Evidences about how valuable is judged the investor-pays model can be found in Bhattacharya, Wei and Xia (2014). According to them, *“the investment advice provided by investor-paid rating agencies significantly influences the investment decisions of a group of institutional investors and improves their investment performance”* (2014, p. 28).

However, the investor-pays model does not only have benefits. Indeed, as it has already been noticed, in a bigger market, participants can act as a free rider. Bongaerts identified potential problems that will imply the free riding on the credit rating market and will prevent to apply the investor-pays model as an alternative to the issuer-pays (2014). Then, according to Kashyap & Kovrijnykh, it is not proved that investors will not ask for a rating, even if it is not going to be efficient, especially if the investment seems to have a high quality (2014). Thus, investor-pays model may not solve the problem of conflicts of interest even though it will be different that the one presents with the issuer-pays model. Further disadvantages are discussed in Fennel & Medveded (2011).

3. Skin-in-the-game model

Beside these two more common business model, the literature presents the Skin-in-the

game model.¹¹ Warren Buffet had introduced this model and it refers to a situation where insiders of a company buy stocks of the company they are running (Investopedia, nd). This model can be therefore applied to the credit rating industry. It will imply that the CRAs will have an equivalent interest to the investors in the issue they have rated. Thus, the quality of the rating will matter to the CRA. Models in line with the idea of Warren Buffet had been introduced and widely discussed in the literature. Listokin & Taibleson proposed, that CRAs, *” Instead of receiving cash for their rating of a security, the agencies should receive some of the debt that they are rating”* (2010, p. 94). Another variation is the model, presented by Becker & Opp, where the regulator pays directly for the rating (2013). On the other hand, Bongaerts (2014) discussed the investor-produced model¹² where investors are contributing to assess their own ratings to the issues – another variation of the skin-in-the-game model. By doing so, investors may provide a greater quality than the CRAs because they have something in stake. Using this kind of model can be considered as an attempt to decrease the dependence on credit ratings produced by CRA. Indeed, regulators would henceforth use ratings that are not determined by CRAs. In a real case life, regulators of the insurance industry are already using ratings of Pimco or BlackRock, two assets management firms – investors – in order to determine the capital requirement (Becker & Opp, 2013 and Bongaerts, 2014). However, Bongaert argues about the potential positive effect of the alternative states above *“if issuers prefer inflated ratings and investors can set the funding shares they solicit freely, issuers select investors that solicit low funding share in order to maximize rating inflation. Because investors compete for projects, they will only solicit low funding shares. This effectively undermines the disciplining effect of skin-in-the-game [...] Providing CRAs with skin-in-the-game (e.g. by requiring a mandatory co-investment by CRAs in issues that receive high ratings) yields similar problems”*(2014, p. 9). The positive incentives of the skin-in-the-game model are consequently diminished in case there is no intervention from the regulator. In addition, Becker & Opp did not find any evidences that investors’ ratings outperform credit ratings from regular agencies – in the case of Pimco and BlackRock.

¹¹ See Hill (2009) or Rafailov (2011) as well.

¹² It can be considered as an internal credit risk assessment.

4. Platform or intermediary model

The senator Al Franken in the negotiation concerning the Dodd-Frank reform act in the US had proposed another model (Bongeaert, 2014). It is a model that can be defined as having a fourth party – we imply that investors, borrowers and CRAs are the three ordinary party – in the credit market and it will play a role of intermediary. The literature has developed several models where it is the type of the intermediary who changes.

In the model proposed by Mathis, McAndrews and Rochet (2009), the intermediary will be a platform as a “clearing house or a central depository” that will be in charge of the rating process. It prevents any commercial contact between issuers and CRAs. The platform is in other words responsible for organizing the rating of a bench of issue that has to be rated by CRAs or more specifically NRSOs. In addition, the fees linked to the rating process will not depend on the outcome and it is the intermediary who will paid the CRAs, thus, it avoids any incentive to inflate ratings. Richardson & White (2009) and Ponce (2009) proposed similar models.

Another model proposed to designate a “trust” (Chakraborty, Saretto & Wardlawis, 2016). It is *“designed as a pass-through structure that collects enough funds from the issuers to pay the rating fees, which are independently negotiated with the CRAs.”*

These intermediaries – or platform – may eliminate any incentive to inflate ratings and will reduce the conflicts of interest in the industry as well. Indeed, firstly they will not have anymore contact between the issuer and the CRA it would then have no more incentive to engage in rating shopping. Secondly, the platform will not have the same profit maximization as CRAs as it will maximize the interest of both side of the market – issuers and investors.

However, according to Fennel and Madvedev (2011), this model will need further research as being relatively new, before it will be possible to develop policy proposal to establish it. Even though, they agree that it will be quite straightforward to implement. In addition, Ponce noticed that this model could not prevent to any secret contact between the issuer and the CRAs that is chosen by the platform (2009). He defends then that the model should be supported by a prudential oversight of ratings’ quality. Further, Bongeaerts point out that this model may have the same problem as the investor-produced model if ultimate investor chose the CRAs that rate the issue. On the one hand investors will have incentive to keep funding share small and on the other hand, issuers can influence investors (2014).

5. Public or non-profit organisation

A third alternative implies to produce ratings by non-profit organisation or public organisation, meaning runs by the states¹³. The idea has been introduced by the Risk Management Institute of NUS and it has rated about 50,000 companies (Duan & Van Laere, 2012). The advantage of having ratings that are assessed freely is that it avoids completely the conflict of interest, as no incentive to do so exists. However, the information used in order to assess the issue is the information that is publicly available only. It means that the accuracy of the rating may be not optimal. In addition, a public offer for ratings may lead to insufficient quality due to the lack of innovation or quality control that implies to a public company.

6. Performance model

Another proposal is to slightly change the current model – issuer-pays – by weighted the income of a CRA regarding the performance it produces (Rhee, 2014). All CRAs will then pay a percentage of their revenue to a fund that will redistribute the revenues to the best CRAs performance. It will decrease the incentives that lead to conflicts of interest and necessarily increase the quality of the ratings. Although this model can be easy to implement, the impact on the market are unclear and the literature has not yet examined enough this proposal to be fully discuss in this paper.

7. Cuomo plan

Another plan in order to prevent a new crisis of confidence is the Cuomo plan. Andrew Cuomo is the New York State attorney general that has investigated on the role-played by CRAs – more specifically the big three – in the mortgage market. The plan aims to prevent the ‘rating shopping’ effect caused by the market structured and will force agencies to reveal more information about the underlying of the products they are rating in order to help investors to be able to do their own analysis of the credit risk (The economist, 2008). In 2004, a pre-agreement between the big three and the state of New York have been found. It consists in several rules, first, CRAs are subject to fines in case of unjustified rating and second CRAs will have to practice a certain level of due diligence (Lynch, 2009). However, the plan has not

¹³ See Lynch (2009) and Rafailov (2011)

been released in details¹⁴ but, in brief, it aims “*to attempts to addresses the conflict of interest faced by rating agencies by forcing firms to pay the rating agencies before initial analysis*” (Camanho et al, 2009).

8. Other models and propositions

Other alternatives have been proposed regarding the regulatory framework and new policies of intervention– Pagano & Volpin (2009), Utzig (2010), Tichy et al. (2011) or Ekins (2012). It is not an exhaustive list of the literature presenting solutions or modification of the regulatory framework of credit rating, however, we have realized that not all the literature on that matter could be analysed and therefore we advised additional readings on the subject in case the lectors would be interested.

This section aims to notify the lectors what are the different remuneration models CRAs could introduce. However, it will not be discussed to know which model is better because, first, there are pros and cons to each model, it is therefore why the business model is not part of the EU regulations, as we will see below, and second, none of these models allow to be fully rid off the conflicts of interest presented above. Thus, we do not believe a change in business model will improve considerably the effectiveness of the industry for investors.

¹⁴ See Lucchetti (2008), Deb & Murphy (2009), Opp et al. (2009) or Bolton, Freixas & Shapiro (2009) for more details.

V. Argumentation and hypotheses

A. Regulation

The CRAs implication in the crisis 2008, or at least the failures in the industry, pushed regulators to review CRAs' regulatory framework in order to avoid taking the same direction as the pre-crisis events. The main objectives of the regulators are to protect investors and to be sure about the stability of the financial market in the EU. The provisions put recently into forced apply to all CRAs that are based in the EU.

1. CRA I & CRA II

In the European Union (EU), three regulations about CRAs have been amended since 2008. The CRA I regulation is the first set of rule that had been introduced at the end of 2009. The purpose of these new regulations had two objectives. The first one is to have a better control on the industry while the second one is to prevent and reduce the conflicts of interest present in the credit rating industry. The first part of the regulation forces CRAs to be registered with the national competent authorities, which will allow authorities to supervise them. The second part concerns the conflicts of interest. In order to avoid it, new rules and requirements has been established in order to pushed CRAs to engage in more sound and transparent rating activities.

The CRA II regulation had been entered into force in 2011. It had implied the creation of European Securities and Market Authority (ESMA). This institution has henceforth the role to supervise the CRAs in the EU. It can be seen from the table 1 below what are the main roles of ESMA.

Table 1: Overview of the tasks of ESMA

Registration and perimeter activities ¹	Supervisory framework		Disclosure
	Risk assessment and planning	Supervision	
EU-based CRAs must register with ESMA.	Identifying risks and trends present in the credit rating industry.	Responsible for continuous supervisions of CRAs.	Ensuring disclosure of rating methodologies and key assumptions.
Non EU-based CRAs that grades are used inside the EU have to be at least certified by ESMA.	Realizing a risk assessment regarding market data collected and knowledge of the market.	Monitoring periodic reporting by CRAs.	Managing CEREP (a public database on rating performance).
There are two phases of the registration. First, the completeness and second, the compliance.	Developing risk scorecards for each CRA and for the overall industry.	Monitoring CRAs' changes in their initial conditions for registration.	Managing Socrat (an internal database) where all monthly rating actions are reported.
Developing regulatory technical standards for the registration process.	Developing a work program.	Possibility to conduct investigation if a potential risk of non-compliance is identified.	
Checking if there is not any CRA that issue ratings in the EU and that is not registered or certified.		Following the investigation up.	

Source: European Court of Auditor

In sum, from the crisis until 2011, two regulations had entered into force and three main purposes can be put into evidence.

First, henceforth, agencies that want to work in the EU have to be conformed to several obligations set in the new regulations. It has for purpose to improve the quality of the ratings and to monitor the independence and validity of the rating assessment procedures. Moreover, both objectives are henceforth under the supervision of the new institution created, ESMA.

Second, the rules introduced define a new way of conducting the business in the rating

industry. The rules take into account the conflicts of interest, the quality of ratings, rating methodologies and the lack of transparency. All these elements listed are the core of the new regulatory framework in order to avoid a new crisis that may be related to the rating industry.

Third, the creation of a new institution charged to supervise CRAs in the EU shows the will of regulators to have a better supervision on the industry. Henceforth, regulators are allowed to require any files and data, to hear persons, to investigate and to bring on administrative sanctions and penalty payments. It shows that regulators want to be able to hold CRAs accountable in case a new financial burst. In addition, the supervision is now centralized which is more efficient in order to monitor CRAs.

However, the use of the credit ratings had not yet been taken into account in the two first set of rule. Indeed, as it is specified in the previous section, ratings had ‘force of law’ given the fact how regulators have used it in order to determine the Capital requirement of financial institutions. We know it had created an investors’ overdependence on ratings, which may have been one of the main cause of the financial crisis according to several authors (e.g. Partnoy, 2009 or White, 2010). Therefore, another measures had been introduced and will be discussed below. It refers to the EU complies with international regulation discussed in the section linked to the overdependence of investors to CRA ratings.

In addition to that, a third CRA regulation had been introduced in 2013.

The analysis that followed will be focused on the impact and strength of the CRA III regulation as well as the measures taken in order to decrease the reliance on CRAs ratings. It will aim to be able discuss potential further alternatives to improve the credit rating industry.

2. CRA III regulation

The CRA III regulation has for objective to improve market efficiency by providing incentives to increase the competition in the market, decrease the conflicts of interest, improve disclosure of the structured finance and create a new mechanism of rotation for CRAs. This section is based on regulation (EU) NO 462/2013 of the European Parliament and the council¹⁵, on the final report of the European Commission on the state of the credit rating

¹⁵ Available on the European Union Law website, <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013R0462>.

market published in 2016,¹⁶ and on the EU response to the Financial Stability Board, 2014.¹⁷

a) Competition in the market

In the third regulation introduced by ESMA, it is required for issuer to ask for double ratings concerning structured products and to publish both of them. Before, CRAs has the possibility to release only the one they wanted. That had prevented to increase any sound competition in the market as, first, corporate would rather trust big CRAs to assess the credit risk on their bond, second, small CRAs would probably engage in inflating ratings in order to gain market share, pushing big CRAs to do the same. However, henceforth it is compulsory to release both ratings, then CRAs could not too obviously process to a inflating rating procedure. Indeed, issuers and investors will be able to compare both ratings, the investors could therefore judge about the best quality ratings. It inevitably increases the cost of reputation than CRAs are facing. Providing too high or unjustified grades will be harmful for the CRA on a moderate and long term. It has to be noticed that regulators assume that issuers chose CRAs independently and they have not thought to a strategy where both ratings were inflated.

Furthermore, regulators have put into force a rule that constrains issuers to call out to a smaller CRA (less than ten per cent of the market) for the second rating unless the firm can prove and explain why it should not be a small CRA that should take care of it. It does not mean that the competition on the market will certainly increase; indeed, issuers can always find some way to justify than smaller CRAs are not as good as big CRAs. However, as ratings are henceforth public for investors if smaller CRAs start to provide more accurate information and a higher quality service, big CRAs will have to increase the quality of their ratings in order to keep their market share. Moreover, regulators tried to decrease the overreliance on ratings by providing more information available for investors who are henceforth able to do their own comparison.

¹⁶ Available on the EC website, https://ec.europa.eu/info/publications/studies-relating-credit-rating-agencies-regulation-eu-nr-462-2013_en.

¹⁷ Available on the EC website, https://ec.europa.eu/info/publications/response-financial-stability-board-request-action-plans-reduce-reliance-cra-ratings_en.

b) Conflicts of interest

In order to improve the efficiency on the market, ESMA created several rules pursuing the purpose of reducing the conflicts of interest already mentioned. They introduced rules in regard with the quality and integrity of assessing ratings, the independence of the rating, the prevention of conflicts of interest and CRAs' responsibilities regarding the issuers and the investors. All the measures taken have the purpose to check if ratings are inflated because of any conflict of interest that may have occurred. The results of these measures can be double; on the one hand, it may ensure a greater independence of the ratings, improving the quality and the confidence of the market participants. On the other hand, the coverage of the market may fall because of the increasing costs these measures imply. CRAs could raise the fees asked in order to cover these additional costs and therefore the demand in ratings could go down. Moreover, higher costs mean that the entry barriers could increase and therefore negatively impact the competition. In addition, it has to be point out that the system has to be effective enough to be able to control complex products as well. Otherwise investors could rely on the rating while in fact it is not assessed correctly and it is still affected by conflicts of interest. Investors would believe the provision is sufficient enough to avoid any failure of the system and would not monitor the investments on their own.

In addition to the rules, CRAs are henceforth forbidden to assess credit risk of any investment linked, directly or indirectly, to any person who has a part in it or is working for the agency. The part of shares hold has to be less than five per cent. This will lead to an improvement of the independence of the ratings and an increase of the market's confidence.

As we have seen in the literature review, the business models of the CRAs have been put under scrutiny. The issuer-pays model more specifically has been really criticised because 'its implication' in the crisis. We actually do not believe that the business model is a direct cause of the crisis as it did not been involved in any crisis for more than thirty-five years before the crisis. In the new set of rules, nothing concerning the business model is put into force. Indeed ESMA believes that all the business models, discussed above, present conflicts of interest (ESMA). Thus, CRAs can use any business model at their convenience. It is not in the scope of the new regulatory framework as, so far, none evidence shows that one of them is better than the others.

In sum, with these measures mentioned above, ESMA is involved in the conduct and the governance of the CRA but it does not involved in how the CRAs is remunerated.

ESMA had expanded its regulation a bit further, still in order to fight about the conflicts of interest. First, ESMA put into force regulations that affect the person working for CRAs. Henceforth, everybody who is working for this type of agency should have the appropriate knowledge to the task asked. In other words, people will have to be talented and skilled in order to be able to rightly assess the credit risk and therefore increase the quality of the ratings. However, as the previous rules, it may imply a higher cost for the CRAs, which it can lead to a lower coverage of the market and higher entry barriers. Next, the Supervisor has modified the remuneration system of the CRAs' employees in order to decrease the incentive to response to the issuer needs instead of assessing correctly the risk. This rule is a bit in contradiction with the previous one, as high talented people will definitely look for higher compensation or, even if they agree on working for a CRA, they can be demotivated because the lack of benefits linked to the performance. And finally, ESMA require CRAs to perform a rotation of employees who approve ratings. This last measure can have different impacts on the market. Indeed, rotating employees can increase the trust of investors and the accuracy of the ratings. In addition colluding employees will be spotted more easily. However, it may affect the relationship of trust between issuers and CRAs leading to a lower information quality exchange.

c) Rotation mechanism

The rotation mechanism has been first introduced 8 years ago¹⁸ in the purpose of reducing the conflict of interest, however, the amendment that we are analysing is relatively more recent and because of the lack of experience and evidences in the credit rating sector, ESMA did not yet consider these measures as aiming to reduce the conflicts of interest. ESMA had allowed some exceptions of this provision given the fact the rotation mechanism might increase the costs for CRAs but agencies have to be able to prove that they do not have the necessary resource in order to fulfil this new requirement.

¹⁸ The rotation mechanism has been introduced in 2009 in in Regulation (EC) No 1060/2009 and it has been amended in 2013 in the regulation we are currently analysing in this paper.

These measures can have different effects on the industry. First, the relationship issuers/CRA's will change. Indeed, as CRA's will be forced to reduce the time horizon to work with an issuer, it may encourage CRA's not to develop a too deep relationship that lead to inflated ratings. Thus, the quality of the ratings may increase. However, on the other hand, CRA's could decrease the resource allocated to an issuer who has a contract that comes to an end. The quality of the information provided will be therefore lower than without the rotation mechanism.

Because of the potential negative aspect of the provision, ESMA has decided to introduce the provision gradually. Therefore, currently, the scope has been limited to re-securitisations. The rotation mechanism applied on the market for re-securitisation can have a positive effect on the number of CRA's involved in it. Moreover, it could help to revitalize the market that is currently at the stop as the interest to issue re-securitisations is low in the EU after the financial crisis.

In sum, we assume that the rotation mechanism could result positively or negatively and that the supervisors have limited its scope, it has indeed phased the implementation, in order to be able to judge first the potential effect of the regulation.

d) Disclosure

The following regulations aim to establish a regulatory framework about the disclosure of information regarding structured products such as CDO or MBS. Henceforth, all information related to the credit quality and the performance of the structured asset will have to be published on a platform set up by ESMA. Moreover, this platform will have to be accessible for every market participant and other players on the market. The information provided has to contain several elements; *“the structure of the securitisation transaction, the cash flows and any collateral supporting a securitisation exposure as well as any information that is necessary to conduct comprehensive and well- informed stress tests on the cash flows and collateral values supporting the underlying exposures.”* (ESMA, 2015, p. 105, para. 421) Therefore, investors will have a greater idea about the creditworthiness of every rated issue. However, the availability of the information does not mean investors will be able to treat with the information correctly, thus, the information released should be simple in order to be analysed and compared. If that so, investors will be able to better use the ratings in their

investments process by understanding the fundamentals and the elements behind the final grade. In other words, the information provided can be deeply analysed in order to evaluate the quality of the rating. This may, on the one hand, push CRAs to improve their ratings process and on the other hand, create less dependence about grades released. Of course, it implies that every investor would have time to consider and understand the information given otherwise it could create some arbitrage opportunity that sophisticated investors will benefit of.

3. Overreliance mechanisms

A set of new rules regarding the reliance of the investors about the ratings has been introduced by ESMA in order to reduce it. The EU follows the Financial Service Board (FSB)¹⁹ principles in this matter, thus, the regulations established prevents Central banks to influence the market by using financial tools, credit ratings, in order to evaluate their credit judgments of an entity or financial instruments. Therefore, financial institutions²⁰ have to determine their own credit risk assessment instead of relying on external credit rating in order to diminish the impact of using third party to assess credit risk. Plus, supervisors²¹ will have to remove and review all the references to CRA credit ratings in all guidelines and recommendation and will not have the right to use them as the use of ratings by supervisors confers ratings and therefore CRAs too much power and it will influence investors' perception on the ratings. In other words, any use that can create ambiguities in regard with the use of ratings and increase the reliance on ratings has to be monitored by supervisors. And finally, the regulation about the capital requirement in the banking industry is modified in order to decrease the power it gives to CRAs.

¹⁹ FSB is an institution responsible for monitoring financial markets. It supervises CRAs and controls their implication in the markets. It follows recommendation of the G20 meetings, or more specifically of the International Organisation of Securities Commission (fsb.co.za)

²⁰ These entities have to refer to entities mentioned in Article 4(1) of the regulation (EU) No 462/2013 of the European parliament and the Council. Meaning, Credit institutions, investment firms, insurance undertakings, reinsurance undertakings, institutions for occupational retirement provision, management companies, companies, alternative investment fund managers and central counterparties.

²¹ The European Supervisory Authority (European Banking Authority) (EBA) established by Regulation (EU) No 1093/2010 of the European Parliament and of the Council, the European Supervisory Authority (European Insurance and Occupational Pensions Authority) (EIOPA) established by Regulation (EU) No 1094/2010 of the European Parliament and of the Council and ESMA.

It can be noticed that previous regulation can affect the overreliance of ratings. The rotation mechanism added to the disclosure measures will increase the number of credit risk assessment for an issuer. Therefore, the ratings and the information used in order to evaluate it can change, investors could then come to realize that ratings is only a opinion that can vary from a CRAs to another regarding the information and models used. The reliance on the ratings to assess investments could then decrease.

From all the regulation above, we can make hypotheses that we will analyse regarding the market report of the ESMA released in 2015. We already know that sometimes the time horizon between the regulations' introduction and the observations may be too short to truly draw some conclusions. However, it will give us some incentives on the future impact of the credit industry for investors.

B. Hypothesis

First, we believe that the set of rules will globally increase the competition on the market in a sound way. It means that the increasing competition would not imply inflated ratings in order to gain market shares.

Second, the quality of the ratings will improve, as the conflicts of interest in the industry will diminish. Many factors are going in that way. Indeed, the reputational costs will be higher and a pressure will come from small CRAs. It supposes that small CRAs will practice a higher quality credit assessment in order to gain markets share instead of accommodate to issuers' needs.

Third, with the new regulatory framework, there will have greater information available to the public. We believe that on the one hand it will allow some investors to reduce their reliance on the ratings for their investment. However, on the other hand, according to us, it will only benefit those who have the knowledge and the time to analyse it.

Forth, we do not believe the entry barrier will increase despite the fact that the regulations established might increase the costs of the CRAs.

Several implications of the new regulation are giving us some reason to believe in our

hypothesis. For instance, we noticed that the regulation that aims to prevent any links between the investments and the CRAs might reduce the incentive of the CRAs to act as a cartel and connive with each other. It will therefore increase the competition in the credit rating market. Second, the rotation mechanism may increase the chance of CRAs to have new clients, as they will not be able to keep the same CRAs too long. The competition will be therefore higher and CRAs may increase their terms in order to gain new customers. The risk of inflated grades related to that will be reduced or even prevented by the disclosure rules. However, it is not sure that the competitiveness of smaller CRAs will benefit from the rotation mechanism if issuers can manage to switch between large CRAs to another. In addition, no evidence, that the regulation is going to prevent it, is found. Moreover, the disclosure requirement may reduce the conflicts of interest and increase the competition as investors can inquire and check information about the ratings. Consequently, CRAs will not be able to inflate ratings as easily as before and CRAs could compete between them about the quality of the rating in order to gain market shares.

In the following section, we will analyse the data collected in order to see if our hypotheses are confirmed and if the new regulatory framework is allowing a more sound environment for credit rating industry which could imply that CRAs have still there importance in our financial system.

VI. Result

A. Evidences

EU regulators have been mandated to provide a Technical Advice (TA) report of the regulatory framework of the credit rating industry. The authority is asked to provide these reports in order to evaluate the effect of the CRA regulation on the main concerns of the industry, stated above, as well as assesses how the industry is evolving. The TA explains how the goals of the regulations are achieved in the market and presents the data they have collected with the market participants and other players on the market in 2015 – called the Call for Evidence (CE).²² In addition to the CE, we took into account the final report on the state of the credit rating market made available by European Commission²³ published in 2016 and the Technical advice realized in 2015 on reducing sole and mechanistic reliance on external credit ratings.²⁴

1. Competition and concentration on the market

Regarding the data collected, it seems that investors have always asked for another ratings if they feel it was necessary. Indeed, the CE shows that issuers are asking for one or more ratings regarding the different investors requirement they must fulfil. However, since the new regulation, they are henceforth forced to solicit another rating even though they do not think it is useful (double rating rule). Different effects are taken into consideration in the CE depending on who is answering to the survey.

First, in the matter of the double ratings, CE suggests that issuers may not look for the best quality rating in order to evaluate its second rating as they may focus more on the price of the rating instead. In addition, it is pointed out that investors may not be that much willing to have several ratings otherwise they would have a current demand of additional ratings. Moreover, evidences show that they are mostly considering the Big Three ratings only.

²² Available on the ESMA website, <https://www.esma.europa.eu/document/technical-advice-competition-choice-and-conflicts-interest-in-cra-industry>.

²³ Available on the EC website, https://ec.europa.eu/info/publications/studies-relating-credit-rating-agencies-regulation-eu-nr-462-2013_en.

²⁴ Available on the ESMA website, https://www.esma.europa.eu/sites/default/files/library/2015/11/esma-2015-1471_technical_advice_on_reducing_ole_and_mechanistic_reliance_on_external_credit_ratings.pdf.

Therefore, the data collected in the TA shows that it is more likely that the double rating will not create incentives to increase the competition as both investors and issuers are more considering the big three ratings even for a second opinion. The dominance of the big agencies will then continue and the quality of the credit risk assessment and the business models are more likely to remain the same. Even since the issuers are forced to make public the two grades, there is some chance that the second CRA is assessing the grade regarding the first one. The rule of the double rating is therefore very limited in term of improving the quality of the ratings or the competition in the market.

However, the effect in the market is not that simple. Indeed, regarding the survey realized in the CE framework, it is indicated that it may have a slight increase in rating demand for smaller CRAs since 2010. The both part of the market do not notice the evolution of the number of CRAs in the same way. Indeed, for CRAs it has definitely grown while for investors, only one has answered that the number of CRAs has increase compared to 2010. It seems then that investors are also looking for ratings that come from smaller CRAs as well. Nonetheless, it is not sure that the increase of new small CRAs is not linked to the fact they are able to practice inflated rating. In order to evaluate it, analysts have looked at the prices on the market. No evidence on a price decrease has been found, showing that the new small CRAs may still have engaged in inflated rating and therefore it will not increase the competition in a sound way. Despite the fact that price did not decrease it does not mean that the new entrant have engaged in inflated rating. Indeed, reputation concerns on a long-term basis could push these new entrants to discipline themselves and instead produce good quality rating in order to create a good reputation with the investors.

The impact of the new regulation on the competition in the market is therefore mitigated. Regulators, except for one, who have answered to the survey, were however expecting such limited impact.

Second, regarding the rule encouraging issuers to ask to small CRAs to assess their issue. The analysis of the responses shows that the market does not believe in the lack of expertise of the small CRAs. However, issuers are reluctant in working with small CRAs because of the lack of reputation these CRAs have among investors. In addition, the small CRAs have usually a geographical coverage that is insufficient and the cost to enter in a new relationship with another CRA is high. Subsequently, issuers would more likely use one of the big CRAs in order to assess the second ratings. Therefore, if the lack of reputation or expertise can be

arguments that prevent issuers to use small CRAs, then the competition in the market will probably not be affected. Even though the quality could be similar, it is the perception of the investors and issuers that has to change in order to overcome the cost of changing CRAs. However, on the other hand, if the lack of reputation cannot be emphasised as an argument not to use small CRAs, then it will become mandatory to use them and therefore issuers would have to choose one of them. Two aspects of the smaller CRAs could be then used; the market shares it already has or the quality of the assessment. Currently, the use of smaller CRAs is still not mandatory, thus, when issuers are using them it is because they believe in the quality of their services. It has to be point out that a mandatory use of small CRAs may lead to confusion on the quality perceived by investors as they will not be able to spot the difference between the use of a small CRAs due to the quality of its services and the use of a small CRAs because issuers have to comply to.

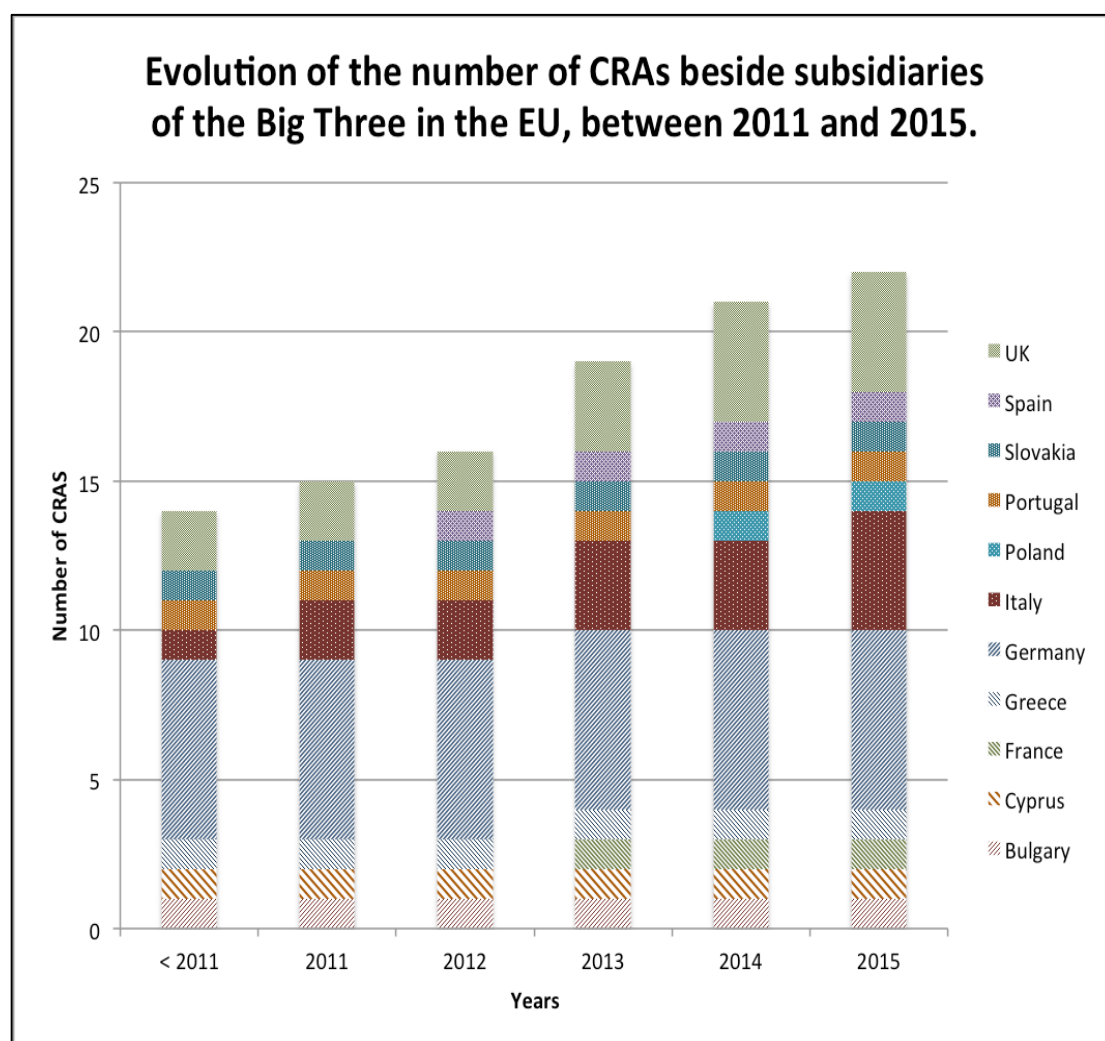
To summarize, small CRAs do not enjoy enough reputation to create incentives among issuers to choose them in order to assess the second rating. Only a few CRAs have been able to see an increase in their demand for ratings since the regulation has been established. So far, the regulation is then only offering small CRAs to build their reputation with time and there are really little impacts on the market's competition.

a) Barrier entry

In order to evaluate if the previous regulation have increase the costs and therefore reduce the accessibility of the market by new entrants, we will analyse the evolution of the industry through the data released by ESMA (ESMA, n.d.).

First of all, it can be see from the figure below that the number of smaller CRAs has increased since the regulation has been put into force; one additional CRAs in the France, two in Italy, one in Poland, one in Spain and two in the UK. Therefore it gives a hint that despite the new regulations, small CRAs are still entering in the market.

Figure 4: Evolution of the number of CRAs



Source: ESMA

Regarding, more specifically, the costs, the survey provided by ESMA²⁵ released several additional costs linked to the implementation of the regulations. It will not be reviewed in details here, as it is not what it is interesting us, it only allows us to confirm that the new provisions generate higher costs for new CRAs. However it does not seem to prevent new entrants to enter in the market. Therefore it can be said that new provisions do not exclude potential new CRAs to break in the market.

2. Conflict of interest

Concerning the rules created in order to reduce the conflicts of interest, it seems that

²⁵ Refers to the Technical advice available on ESMA website, <https://www.esma.europa.eu/document/technical-advice-competition-choice-and-conflicts-interest-in-cra-industry>

almost every CRAs that have replied to the survey agree that they have not experimented the negative consequences stated above. The increasing costs linked to the provisions have therefore not diminished the CRAs' ability to rate.

Investors' opinion is more mitigated. On the one hand some agreed that it would have no impact, however, on the other hand, others believe it will improve the effectiveness and the quality of the ratings as the new regulation allows reducing the conflicts of interest and improving transparency. These two opinions may not be totally contradictory. Indeed, ESMA insisted that the point of view of market agents may differ, as several measures were already present in the market when they have introduced the new regulation. As a result, these provisions can be seen as inefficient because it did not have changed significantly the business model of some CRAs. Nonetheless, it does not mean that this regulation is inefficient in order to reduce the conflicts of interest present in the credit rating industry.

In addition, it did not imply subsequent additional costs for CRAs and they did not suffer from any implementation issues, thus it can be said that the risk of seeing the demand decrease because of extra costs for CRAs did not occurred. Therefore as none negative evidence has been found in the survey, it can be considered that the regulations that aim to reduce the conflicts of interest will have a positive impact on a long-term basis on the market. ESMA has actually noticed that it will be difficult to see direct results from these regulations. Notwithstanding, it will help them to supervise and punish CRAs that do not significantly attempt to reduce the conflicts of interest.

We have put into evidence in the previous section that CRAs were henceforth forbidden to deal with any issuers that owe more than five per cents in the investment. Neither CRAs nor issuers answered in the survey to have negative impacts linked to this new provision. On the other hand, investors does have mixed and opposite perception of it. Some believe that it will have only little effect on the independence and the quality of the rating assessment although some think the contrary. Regulators support more the view of the second part of the investors however they agree that it will have a little impact regarding all the regulation established to reduce the conflicts of interest.

The overall impact on the market is therefore mitigated. Indeed, the several perceptions of it do not strengthen the certainty about the short-term positive aspects of the regulation.

However, seeing that none player on the market seems to express negative feelings about this provision and if there are not that many implementation issues, then it can be said that it will most likely have a positive shock on the independence and the quality of the ratings in a longer term.

The view on the rest of the regulation related to the rotation of employees and their remuneration system is varied as well. Issuers' point of view is more or less the same. They believe that it will have only a limited impact or none at all.

Investors, as far as they are concerned, have different positions. It goes from positive to negative impacts. Those who perceived that the regulation would have a positive aspect believe that the regulation would improve the transparency and reduce the conflicts of interests while those who are against support the argument like the rotation will impede employees to gain sufficient experience and therefore the quality of the ratings will be diminished.

On the other hand, Regulators' standpoint is clearer. According to them, the regulation will have a positive impact in order to decrease conflicts of interest. More specifically, ESMA claimed that it has helped to divide lucrative activities to credit rating activities.

In addition, the new regulation implies higher costs for CRAs however; it is not possible to link them with any eventual higher price and therefore lower demand.

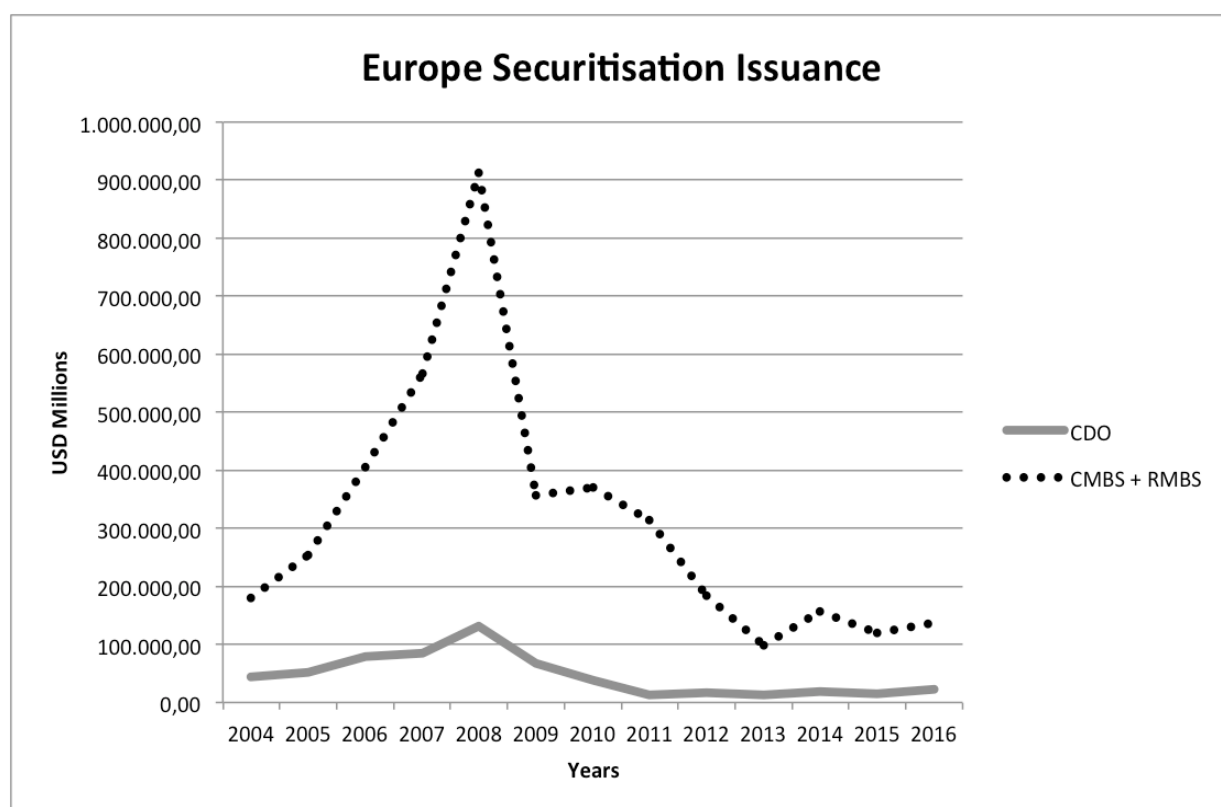
Subsequently, it is more likely that the regulation will have an overall positive impact on the reduction of the conflicts of interest, such as those related to key governance and internal control functions, as it would permit regulators to restrict CRAs that are not focusing enough on the quality of the ratings. The only direct risk is the lack of gaining experience process that employees would not benefit anymore and thus it may crumble the quality of the rating.

3. Rotation mechanisms

First of all, we have to point out that the after-crisis market of structured products is no

longer as big as it used to be (ESMA). The impact of such regulation would then probably be first smaller than it would have been before and second the impact will be difficult to evaluate. Indeed, “none of the registered CRAs have assigned new ratings on a re-securitisation in the EU since the entry into force of the 2013 amendments to the CRA Regulation” (ESMA, 2015, p 98, para 381). The figure below shows the size of the market for securitisation products, CDO and RMBS (residential mortgage backed security) & CMBS (commercial mortgage backed security) together. It can be seen from the graph that the number of structured products issued in 2016 is below the number of issues in 2004. It shows also the significant crunch of the market between 2007 and 2008.

Figure 5: Europe Securitisation issuance



Source: SIFMA

The new provision will therefore disorient market participants in their interpretation²⁶ of the regulation, as it has been discussed above the supervisors have decided to phase the regulation's introduction.²⁷

According to the survey, CRAs believe that the regulation will have a moderate effect on

²⁶ Researchers considered that some respondents have replied to the survey having in mind the previous formulation of the regulation.

²⁷ Currently, the scope of the provision is limited to restructuring products.

first the volatility of the ratings. And second on the costs that will henceforth increase. It is related to issuers' thoughts that suspect the same trends. However, not all of them agree on that. Indeed, small CRAs show that they will be willing to extend the regulation to other products, showing that they may believe in the inefficiency of the regulation because of its limited framework. Nonetheless, it may be because they have incentive to support the regulation, as it would create an opportunity for them to gain businesses. The opposite is true as well for large CRAs. Even though, on a general basis, most of them agree on the total or truly moderate inefficiency of the regulation.

On the other hand, investors have different point of view. The majority expressed a fear of seeing a negative impact out of the new regulation. They believed that the regulation would have an impact on the costs for both issuers²⁸ and themselves and that CRAs will henceforth not be able to acquire knowledge, which it will affect the quality of the rating. These investors think that they will not be able to analyse and benefit from a rating history between issuers and CRAs anymore. However, not all investors who replied to the survey think the same way. Some presumes that it will reduce the conflicts of interest present in the relationship issuer/CRAs and increase the number of CRAs that will rate re-securitised products.

To regulators way of thinking, the regulations do not reckon on an important impact on the effectiveness of the provisions. Furthermore, some propounds that it will not have any effect at all.

To outline what it is just said, market players' perceptions on the rotation mechanism are mostly negative as it will not, according to most of them, neither increase the competition nor increase the quality of the ratings.

4. Disclosure

CRAs have mostly positive reactions about the disclosure requirement in order to help investors to conduct their own assessments of the credit risk of their investments.

²⁸ Regarding the increase of issuers' costs, this may be actually quite small as it can be seen in the analysis of responses to the survey.

Investors agree as well on the positive impact of the regulation, however, some investors believe that deal with all these information will demand knowledge and time. Regulators have basically answered in the same way, however, their opinion is more varied regarding the effectiveness of the provision and more specifically on the use of the information henceforth available by investors.

The only part of market players that issue more reserve about the effectiveness of this provision is the issuers' side. Indeed, according to them, only sophisticated investors will be able to take advantage of this measure and knowing that the most part of investors does not have this particular knowledge, the effectiveness of the regulation will be limited.

The view of both can be moderated, as on the one hand, it is the issuers who are directly concerned by this provision, thus, it seems more likely that they will present this regulation as inefficient. On the other hand, the other agents on the market may not realize what the provision truly implies for them. In addition, it is not yet clear enough how and to which extend this information has to be released. However, it can be said that there is a positive attitude towards the regulation and therefore it may create less reliance on the final grade released by CRAs.

Finally, it has also to be pointed out that the survey does not find any evidence about any costs increase because of this regulation. Despite that, regulators agree to say that it will imply some implementation problems because of the scope of the regulation and the fact that the industry will be unwilling to issue unsolicited ratings based on information published by issuers.

5. Overdependence

The overreliance on ratings is a main concern of the regulators. In the previous regulation, from CRA III regulation, that we have analysed above, we can see that some have a second objective to reduce the overreliance. Among them, we can see that provisions to reduce the conflicts of interests, introducing the double rating regulation and imposing disclosure requirements have in theory incentives to reduce the overdependence on the ratings. It has been analysed above if, in practice, it has allowed to diminish it. In addition, ESMA has released another TA that has the objective to reduce the mechanisms of reliance as well as create tools in order to facilitate investors' own credit risk assessment.

In 2009, the Joint Forum released data on what financial regulators are still relying on about CRA ratings. It took into account on the “*calculation of the regulatory capital requirement, the classification of the riskiness and concentration level of assets for regulated institutional investors, assessment of the credit risk of securitised instruments based on the underlying riskiness of their assets and credit risk of issuers of listed securities as part of overall capital market disclosures requirements and the determination of eligibility of a prospectus for public offering*” (ESMA Technical Advice 2015/1471, 2015, p.13). These facts are therefore the main concerns of the supervisors in order to decrease the overreliance on ratings.

In that matters, there is an international coordination between ‘countries’ (national supervisors) in order to reduce the reliance on the ratings. The FSB is therefore in charged to supervise it. In 2014, it has released principles that aim to help to implement reduction mechanisms of reliance on CRA ratings. Since the implementation of the principles, they have found that this ‘roadmap’ has helped market participants to remove reliance, however the efficiency is different regarding each jurisdictions and sectors. In addition, FSB is supporting investors to develop alternatives to ratings.

In Europe several committee are in charge of strengthening the FSB principles. The Basel Committee revised its statements on standardised credit risk in order to reinforce capital requirements and thus reduce reliance on external ratings among other sub-objectives. IOSCO Committees have the purpose to set up good practices and recommendations for reducing dependence on ratings of asset management firms and for finding good enough alternatives to ratings for large intermediaries. ESMA’s report on the mechanism reliance on external ratings stated that more central banks have developed their own methods to assess credit risk, which it has helped to collect data on possible alternatives to CRA ratings. The respondents to the study realised by ESMA identify several alternatives to ratings however, it is really not easy to find one which is efficient enough. The different alternatives will be discussed in the following section.

It is difficult to find some real evidences of a decrease of the overdependence however, since the financial crisis, many measures and best practices have been introduced in order to avoid such reliance. For instance, CRR and Solvency II include statements about ratings, more particularly about the role in capital requirements and they aim to reduce reliance. ESMA qualified then the process of reducing reliance as being at an early stage and it is still a

work in progress. It is pointed out that large financial market participants are still using external ratings in their own credit risk assessment and some smaller or less sophisticated financial investors cannot simply find an alternatives to CRA rating, as it has been discussed in the previous section. Therefore, it could be even more harmful for market participants to totally remove CRA ratings. It is for that reason future regulations should aim to reduce the reliance on it and not to remove them completely from the market.

6. Main findings

The first hypothesis stated that the competition will increase cannot be validated. Indeed, the impact of the new regulations is still unclear especially because of the market participants' preference on large CRAs. The reputation of small CRAs is still not sufficient enough to be presented as a good alternative for large CRAs. In addition, the rotation mechanism put into force in CRA III does not seem to provide any incentive to increase the competition. However, there is a global, even though relatively small, trend that shows an increase of the demand for small CRA ratings. On the other hand, it cannot be shown that this potential increase is linked to any potential inflated ratings.

There is none clear evidence either on the improvement of the quality of the ratings process due to higher reputational costs or pressure from smaller CRAs. However, there is an overall positive opinion on the effect of the provisions on a long-term basis. It may have a positive impact on the quality of the ratings because of the supervisors' ability to monitor the quality of assessment procedures. The positive effect is on the other hand balanced as the rotation mechanism for employees put into force in the regulation that aim to reduce conflicts of interest may lead to a decrease of the quality of the rating. Moreover, the other rotation mechanism for CRAs may not increase the quality of ratings either, as it has been seen that vast majority of market players do not have a positive perception about it.

The greater number of information available for market participant following the new regulation is undeniable. However, the effect on the reliance on ratings is still unclear. Market players mostly welcome it and it seems that they agree that it would have a positive impact for investors. Nevertheless it is not possible to make any conclusion as not enough evidence is found on the reports. It is pointed out that further data is needed especially on the format of disclosure. It is clear that regulators are working on reducing the overreliance on the CRA

ratings but, according to our research, it is still at an early stage process therefore we cannot say with certainty that the overall reliance has decreased. Despite none evidence can support it, market participants seem more cautious given the perception of the implication of CRAs in the crisis.

The number of new CRAs has increased despite the new regulation. It can be said therefore that the new provisions do not appear to be too restrictive for potential new entrant.

B. Feasibility of alternatives

This following section is based on the report realized by the European Commission about the feasibility of alternatives to CRAs.²⁹

There are basically two methods for market participants to evaluate the credit risk. The first one is to realize an internal assessment and the second one is to use external ratings as CRA rating. It has been shown before that the internal approaches are not always easy to do for market participants as it depends on their resources and knowledge.

1. Internal rating assessment

The own internal credit assessment is a basic alternative to external ratings. It involves lots of researches in order to collect the necessary information as well as qualitative and quantitative analyses.

Regarding the survey lead by ESMA, market participants explained two way of assessing internally the credit risk, by using uniquely statistical models and/or by incorporating human judgement. Models of credit risk assessment can be done either by the company itself or by vendors such as Oracle or SAP that can provide products that support the computations.

The credit risk can be computed by measuring the Expected Loss (EL), which it represents the foreseeable average of the cost of doing business. It is function of three different factors.

²⁹ Available on the EC website, https://ec.europa.eu/info/publications/studies-relating-credit-rating-agencies-regulation-eu-nr-462-2013_en.

- Quality of the counterparty quantifies by the probability of default (PD). It measures the statistical probability that the counterparty will default.
- Quality of the security quantifies by loss given default (LGD). It represents the percentage of debt that the bank is likely to lose once counterparty defaulted.
- Amount at risk quantifies by exposure at default (EAD). It can be defined as the debt of the counterparty to the bank at the point of default.

The EL is not a risk in itself as it can be measured and the potential losses can be protected. However, it happened that unexpected events occur and therefore the importance is to know how to be protected against unexpected loss (UL) in order to be able to assign capital that protects against the average costs above the mean loss. The company can decide about its level of coverage against UL on its own. Higher the company protects itself, higher the grade given by CRA will be.

The quality and sophistication of the internal model chosen will depend on the size and knowledge of the investor, its resources that can be allocated and the regulatory framework. It may vary also regarding the type of the assets.

Although it has not been proven that reliance on ratings has diminished through the new regulations, the internal option to CRA ratings has some advantages and it is well seen by market participants regarding the surveys conducted by ESMA. First of all, they have found that internal approaches were already broadly used as an alternative to external ratings. Then, the respondents agreed that this procedure allows having better information in the evaluation of the credit risk. Indeed, they are able to benefit from their own experience and relationship with the borrower or the type of security. Thirdly, a large part of corporates is not actually rated by third parties such as CRAs. Therefore internal model for this kind of borrowers/investments is necessary in order to assess the credit risk. In other words, practicing internal approach allows better coverage for evaluating investments. Next, it can be said that the accuracy of the model implemented by the market participant himself will be greater. Indeed, he could more easily rely on it without doubting of its exactingness. Finally, as it is the investor who is actually building this internal model, it will reflect exactly his need in term of assets, sectors, and etcetera.

Soliciting a model through vendors can present on the other hand a cost advantage. Indeed, setting up its own model is expensive and difficult as already explained, thus, smaller

entities might opt to choose this alternative. In addition, it is usually quite easy to use and understand in order to do some interpretation, compare through a risk scales and estimate final result.

However, using internal models does not have only positive effects. Indeed, as already said, it is more expensive in contrast with external ratings. Collecting the data, treating them and managing the model require time, workforce and knowledge that are not cheap. In fact, it is the main concern revealed by respondents. Moreover, the data are not always available or sometimes they are too sophisticated to be analysed. Certain market participants do not have the expertise to truly use them; we have seen in the previous section that regulators are working on strengthening the availability through disclosure requirements. Furthermore, some investors do not always prefer that their asset managers or institutions use internal models. Indeed, it does not allow them to monitor or compare their investments, as it is possible through external ratings. These responses are related to what has been said regarding the role of the CRA. Thus, the potential problem of asymmetric information is not fixed through internal models.

2. External rating assessment

a) Market implied ratings

(1) CDS-implied ratings

This external method measures credit default swap (CDS)³⁰. In brief, this method works through the calculation of the bond spread and then different procedures can be realized. First, you can compare it to a market index or to comparable securities. The purpose is to determine the difference between the spread of the issue in contrast with the benchmark chosen. The larger the spread of the bond is, the higher the credit risk of the debt is. Then, you can also match the level of the spread with a given ratings. Finally, you can also measure the volatility of the stock prices; higher is the volatility, greater are the chances of default.

This method presents several strengths. First of all, a key characteristic is that it is

³⁰ “A CDS is a particular type of swap designed to transfer the credit exposure of fixed income products between two or more parties. In a credit default swap, the buyer of the swap makes payments to the swap’s seller up until the maturity date of a contract. In return, the seller agrees that, in the event that the debt issuer defaults or experiences another credit event, the seller will pay the buyer the security’s premium as well as all interest payments that would have been paid between that time and the security’s maturity date” (Investopedia, nd).

timeless and it takes into account much broader available data for market participants. It has been found that CDS adjusted more quickly to any event during the crisis than CRA ratings. In addition, respondents of the survey agree that it was easier to analyse and to draw their own conclusions in using market data.³¹ Furthermore, as the information is directly available on the market, the costs to collect them are lower and the data are not biased by any human judgment or subjective analysis. Finally, it can be point out that the data available on the market are forward-looking so do the market-implied method.

However, participants of the survey emphasized three main weakness of this method. First, market data are volatile as it is defined either by the offer and demand size or by the market players' feelings. It has to be emphasized that it is the feelings that drive the CDS prices therefore it does not make it the best indicators.³² Those elements can take into account signals that do not have any correlation with the default risk of the security. In addition, the current situation on the market is playing a major role on the market participants' perception. As it was for the previous alternative, the second weakness concerns the risk linked to the asymmetric information. Indeed, market participants could try to influence the market prices in order to take advantage from a decrease or increase in price. And finally, this method does not resolve the problem of pro-cyclicality found in the ratings. Interviewees pointed out that this method presents a pro-cyclicality bias. Indeed, the level of ratings will therefore follow the cycle of the financial system and it will imply negative outcome in case it is used in a regulatory purpose.

It results that this model is rarely used as main model to assess the credit risk. It is more used as complementary information to another credit risk assessment model and it is not use to determine investment decisions.

³¹ Not all interviewees agree on that, as some believe that the market prices reflect more that the fundamentals behind the security. And it is all this additional information that may make difficult to interpret the information that results from the model.

³² CDS have some specific weakness in order to evaluate credit risk. Indeed, first it is only possible to highly liquid products otherwise it will imply a substantially higher spread regardless the actual credit default risk. Therefore, the usefulness of such methods is limited. Moreover, CDS are not available in every country. Some markets do not provide CDS and thus it limit to use CDS as alternative to CRA ratings. Finally, there is a low correlation between spread historical experience and default historical experience. Therefore CDS spreads are more an indicator of demand and supply, as already said, instead of being a good indicator of the fundamentals and thus the default risk.

(2) Equity-based ratings

Similarly to the CDS-implied ratings, the equity-based ratings are used as a proxy for the market's perceptions of the credit risk of an issue on a forward-looking basis. Therefore, it is the company's equity quantified by market capitalization that will help market participants to have a better idea of the credit risk embedded to it. However, the market capitalization is not a measure of the credit risk in itself. Therefore, a method has been taken in order to determine the credit risk out of the equity market data. The method is the so-called Merton model that has been extended by the KMV model³³ in order to compute the expected default frequency (EDF) metrics. The model provides good and timely results in regards with the probability of default of a company among a bench of other companies.

Nevertheless, the model is not perfect. First it is a difficult method to evaluate the credit risk. In addition, the model makes assumptions that are not always true in the reality. Moreover, the model is owned by one of the Big Three, which reduced the opportunity to make it an alternative to CRA ratings.

b) Accounting-based ratings

This model takes into account some financial ratios³⁴ based on publicly available data either on the market or on the data provided by issuers.

It allows comparing issuers to each other or to a benchmark on the market by doing a financial analysis. In addition, as this model is based on accounting measures, it is possible to spot more easily good and bad issuers. Furthermore, this alternative is reliable as Hilsher & Wilson showed in their paper, financial analysis outperformed CRA ratings to evaluate the potential default of the company (2013).

However, these ratios, although easy to interpret for the same industry, can widely differ from a sector to another one. Thus, it makes the comparison between sectors nearly impossible. In addition, it requires experience and knowledge in interpreting ratios therefore

³³ Kealhofer, McQuown and Vasicek (KMV) model is a “leading provider of quantitative credit analysis tools to lenders, investors, and corporations.” (Moody's, n.d.). For more information regarding the model, see ; Sundaram, “The Merton/KMV approach to pricing credit risk” (2001), Kulkarni et al., “How good is Merton model at assessing credit risk?” (2005) and Moody's Investors Service, “Moody's Market Implied Ratings description, methodology, and analytical applications” (2007).

³⁴

1. Total liabilities / Market value of Assets
2. Cash Flow or EBITDA / Market value of Assets

this model may only benefit sophisticated market participants that know how to do. It has also to be noticed that the disclosure of information is different from one country to another and that the financial data may not be available for all type of products. Such as non-listed company bond, governments bond or structured product for instance. Thus, the scope of the method is limited to corporates that release their financial statements. Furthermore, as it is known, accountability is backward looking, then, it limits investors on the exactingness of their investments.

c) Third party assessments (Non commercial): Assessment by Central Banks

Another alternative to CRA ratings is proposed by the European Central Banks. They provide two services, the first one is used to collect, process and release information on banks' credit risk exposure of market players such as credit institution, firms, individuals and public sector –called central credit registers (CCRs). And the second one – called central financial statement databases (CFSDs) – has the same purpose however it gives information about credit quality of counterparties of banks (Estrella, 2000).³⁵

As it is central banks that are in charge of managing these both services, we can be sure that the expertise and accuracy of the model is high as respondents of the ESMA survey confirm it. However, its use is in some way limited otherwise we would have expected a wider use of it before the crisis in order to mitigate the use of CRA ratings. First of all, not all countries have been able to develop a good enough CRRs and CFSDs, although, the regulators are currently working on a better financial integration in Europe. Second, the model does not allow full assets coverage as small entities are not always in the scope of central banks. It will require a greater scope in order to be able to cover each asset on the market and provide broader information. Third, the information provided by CRRs and CFSDs is unavailable for some market participants in several countries as the information is only used for regulatory purposes. Furthermore, it impedes comparison between countries given the fact each country has its own standards that are taken into account in the computation of the credit risk and moreover smaller entities are in most of the case not rated in this kind of model). Finally, it can be said that CRRs, in most of the case, do not provide any rating scales, which it is a great use of market participants.

³⁵ See Estrella “*Credit ratings and complementary sources of credit quality information*” for more details about CRR and CFSD (2014)

d) Third party assessments (Commercial): Automated scoring based on computational models

These models are different than CRA ratings as they provided credit risk analysis based on computational models only. Investors, in that case, are buying directly the evaluation of the debt and not the tool to evaluate the rating itself as already proposed above.

These models are seen as having a major role for smaller entities. Indeed, such models can be applied more easily to smaller entities that are usually unrated. Thus, on the one hand, these entities will benefit from a greater access to the financial market, as the risk linked to the small firms will be assessed. On the other hand, it will allow investors to have a better idea about small entities credit default. The quality of the model will of course depends on the data used to evaluate the risk of the firm. However, market players that have replied to the survey are concerned about the lack of qualitative information related to these models as well as the backward looking perspective, as it is for accounting-based models. They agree that these models are more suitable for short-term investors as it does not have a long-term perspective.

In sum, respondents have evaluated the different strengths and weaknesses of four approaches that can be an alternative to CRA ratings. Among them, only the internal measurement and the assessment realized by central banks, in the case it offers broader information availability,³⁶ are perceived as potential alternatives to CRA ratings.

3. Dodd frank act

Another alternative that could be analysed, according to the EU report, is the Dodd Frank act introduced in 2010 in the US. It can be seen as an alternative that EU regulators should adopt. In brief, the new law, signed in 2010, forces US agencies to use another sources than external credit ratings in their regulations. It has been introduced because of the mitigated implications of the CRAs in the financial crisis and it intends to decrease the over-dependence on the CRAs ratings. In addition, the Act aims to diminish the influence of the Big Three

³⁶ It is included in the agenda of the EU for the end of 2017 and therefore it will be an interesting further research.

about their impact on the financial markets and investments of regulated institutions.

CRA ratings were involved into 2 faces of the US regulation. First, most of the federal agencies were using these ratings for their investment standards. Second, CRA ratings were dictating capital requirements rules. It created a reliance on the ratings as regulators were relying on the CRA ratings in order to draw the regulatory framework, which it means, in some ways, that the grades given by CRAs were granted as good enough to be used by investors.

The Dodd Frank Act is henceforth forcing regulators to use different sources in order to determine the regulatory framework. Therefore, any investment graded by CRAs would not be good enough to justify its safeness. Internal model or information collected through an outside sources is required for unrated and rated investments. Regulators will be there to validate the methods used in order to assess the risk of these investments. In addition, any external information would have to be justified to regulators.³⁷

However, the use of CRAs ratings is deeply anchored in the culture and therefore it may take time to reduce the market's reliance on CRAs ratings have for investors. Therefore, for the following years, regulators have to carefully choose which process can be judged as efficient. In addition, the process in which the capital requirements would not use CRAs ratings anymore has to be carefully determined.

According to the evidences collected by ESMA, at the end of 2015, the US federal agencies have replied to the expectation of the Dodd Frank obligations in terms of removing regulatory bonds to CRAs ratings. However, a delay of about 5 years has been observed.³⁸

It has to be point out that the regulatory consistency regarding the US non rating-based method is assessing on average higher risk weights that leads to higher capital requirements. Although, the US claims that it is giving approximately the same results as the method used by the Basel Committee. Therefore there is an international unmatched between these two methods even if it can be considered as really low.

According to the US respondents to the survey were basically agree that the impacts of the Dodd Frank Act were limited on the market participants as most of them were already

³⁷ It affects financial institution such as banks, mutual funds, securities firms, and etc.

³⁸ Initially the Act had planned that every rule would have been implemented and respected by market players by 2011. However, such ambitious plan has not been met.

doing their own assessment.³⁹ However, some believes it has been relevant for a bunch of investors that needed to be recalled of their obligations regarding their own due diligence to assess risk. In addition, the feelings are the same as in the EU; the internal credit risk assessment seems to be the logical alternative to CRAs ratings because of the limited alternatives or their efficiency.

4. Main findings

The use of external ratings and more specifically CRA ratings is mainly in terms of investment and risk management decisions. It is used on the demand, bid and regulatory level. It has been playing an important role regarding its independence and comparison. It had allowed sharply reducing the asymmetries of information between lender – or investors – and borrowers. However, market participants seem to have been aware of its imperfection and therefore they had a few use of it on its own, depending on several market factors such as the size and sophistication of the investors, the sector and type of products.

There are still several provisions that are referring to CRA ratings in order to evaluate risks of some institution in the European financial system⁴⁰ even though measures have been taken in order to diminish the reliance on those ratings, as presented above.

External ratings are therefore still used in terms of regulatory references and/or market practices which depend from one sector to another.

The feasibility of replacing external ratings depends from one alternative to another.

First, the internal ratings can be seen as the best alternative to counter external ratings drawbacks. However, as it has been explained, there are many issues that have to be outweighed such as the costs or the sophistication of investors, regulatory obstacles and market practices for certain sectors.

Second, the market-based ratings are seen as complementary to external ratings and it is not seen as a substitutes.

³⁹ The same results have been found for the EU. It seems that most of the market participants were already doing their own assessment.

⁴⁰ Namely CRR and CRD IV for the banking sector and Solvency II directive for the insurance and re-insurance sector.

Third, the accountancy-based ratings can be used as additional information but it cannot be fully used as an alternative to external ratings, as indeed, historical data is needed. Moreover, it is not ideal for regulatory purposes.

Fourth, the CB ratings are probably the most viable option to external ratings only if market participants are allowed to have access to it.⁴¹

The last alternative presented above is a different option to CRA ratings however, it is an external ratings as well and therefore it is not seen as an alternative for it. However, it allows reducing the dependence and influence of CRAs.

VII. Conclusion

CRAs fulfil an important role in the financial market and indirectly in the regulatory framework embedded to it. Throughout changing global rules in the market, CRAs opinions have been highly considered by market agents. The last crisis and the direct or indirect implication of the CRAs had made market agents to realize that the entire credit rating business had to be changed. EU regulators as well as international supervisors have therefore worked to improve the industry in order to avoid any new implication of the credit rating activity in a potential crisis.

This paper brings two different outlooks, first, we have analysed the results of the new regulatory framework, more specifically CRA III regulation and the overreliance mechanisms, put into force after the crisis. We have studied the different effects it has in the market in order to draw conclusions on the improvement of credit rating industry. Second, we have study potential alternatives to CRA ratings in order to draw conclusions, first, on potential different choices investor may have to assess credit risk and second, on the viability of the CRAs.

The first objective of the CRA III regulation is to increase the competition on the credit rating industry; however, the impact of the new regulation is still unclear as market

⁴¹ It is planned for end 2017.

participants still have a higher preference for large CRA ratings. The demand of small CRA ratings has only slowly increased showing small benefit of the new regulation.

The second objective concerns the improvement of the quality of the ratings. It has already made a positive effect on a long-term basis however the evidences of the implementation of the provisions until now are still contorted. The main contribution is so far the better ability of the supervisors to monitor the quality of assessment procedures. The general positive aspect of the provision is however really mitigated because of the rotation mechanism put into force that may decrease the quality of the rating.

The third objective aims to increase the information available on the market. The new regulations have a strong positive impact on the market however the current reliance on the ratings is undefined and therefore more data are needed.

Finally some have expressed that these new provisions will increase the costs for new participants to enter in the market however, it does not seem that these provision are too restrictive as there is an increasing number of CRAs in the EU market.

The results obtained were the same regarding the overreliance of the CRA ratings. The study aims to assess the effect of the CRA III regulation on the EU financial market regarding the different point of views of the market participants. It has been shown that the current implication is very mitigated and not so many changes or improvements can be truly quantified. Despite that, the majority of the interviewers expressed an overall positive feeling over the new regulation on longer basis-term.

We have also studied through this analysis the possible alternatives to CRAs ratings in order to determine its viability. According to European Commission reports, there are currently several methods used in order to 'counter' CRA ratings, either as complementary or substitutes. None of them can be considered as the optimal methods. However, these alternatives can offer to investors an alternative to decrease the dependence on CRA ratings. Therefore CRA ratings should not be considered as the only choice in order to assess credit risk either for regulators or market participants. The methods presented above have different characteristics with several strengths and weakness that has to be used or overtaken.

Regulators and market participants should be encouraged to use the most suitable standalone or combined approaches corresponding to their needs. In other words, even if we have seen that none of the method is the optimal alternative, investors should use approaches

that correspond to the needs in term of investment information in order to challenge the credit risk assessment of each other method. It is a mistake to only consider CRA ratings. However, CRAs remains an important and useful approach for several sectors (e.g. insurance, banking) so it is the reason CRAs should not be banned from the financial market, only more regulated. The main point it is to make understand to investors that CRA ratings are opinions that may not be one hundred per cent accurate. Investors need to have their own way to assess credit risk or to use different alternatives in order to compare the assessment of the CRAs.

The impact of the regulations is still not yet clear for the market, but time will allow future papers to dig deeper in the impacts for markets. This paper can be an interesting start to analyse the regulation about the CB rating that is planned in the end of 2017. It can also give investors an overview on potential different choices they have to evaluate the credit risk as well as on the current regulation in the credit rating industry.

The market has obviously realized that CRA ratings could lead to mistake but we like to conclude as the same thoughts of Waibel and Gaillard (2017); even though CRAs, and mostly the Big Three, have failed in 2008, the market agents are still really dependent on CRA ‘opinion’ as it is difficult to find a simple and good alternative.

VIII. Bibliography

- Adelson, M. H. (2012). The Role of credit ratings in the financial system. Standard & Poor's.
- Akerlof, G. A. (1970). The market for "lemons": Quality uncertainty and the market mechanism. *The quarterly journal of economics*, 488-500.
- Amtenbrink, F., De Haan, J., Eijffinger, S. C. W., & Masciandaro, D. (2011). Credit rating agencies. DNB (De Nederlandsche Bank) Working Paper, (278).
- Avgouleas, E. (2009). The global financial crisis and the disclosure paradigm in European financial regulation: The case for reform. *European Company and Financial Law Review*, 6(4), 440-475.
- Bae, K. H., Kang, J. K., & Wang, J. (2015). Does increased competition affect credit ratings? A reexamination of the effect of Fitch's market share on credit ratings in the corporate bond market. *Journal of Financial and Quantitative Analysis*, 50(05), 1011-1035.
- Bahena, A. J. (2010). What Role Did Credit Rating Agencies Play in the Credit Crisis?. *Global Money, the Good Life, and You. Understanding the Local Impact of International Financial Institutions*.
- Bannier, C. E., & Hirsch, C. W. (2010). The economic function of credit rating agencies—What does the watchlist tell us?. *Journal of Banking & Finance*, 34(12), 3037-3049.
- Bar-Isaac, H. (2005). Imperfect competition and reputational commitment. *Economics Letters*, 89(2), 167-173.
- Becker, B., & Milbourn, T. (2011). How did increased competition affect credit ratings?. *Journal of Financial Economics*, 101(3), 493-514.
- Becker, B., & Opp, M. (2013). Regulatory reform and risk-taking: replacing ratings (No. w19257). National Bureau of Economic Research.
- Bhattacharya, U., Wei, K. D., & Xia, H. (2014). Follow the money: Investor trading around investor-paid rating changes. In Working Paper presented at the 2014 NBER Credit Rating Agency Meeting.
- Bolton, P., Freixas, X., & Shapiro, J. (2012). The credit ratings game. *The Journal of Finance*, 67(1), 85-111.
- Bongaerts, D. (2014). Alternatives for issuer-paid credit rating agencies.

- Boot, A. W., Milbourn, T. T., & Schmeits, A. (2006). Credit ratings as coordination mechanisms. *Review of Financial Studies*, 19(1), 81-118.
- Boylan, S. J. (2011). Credit Rating Agency Reform: Insight from the Accounting Profession. *The CPA Journal*, 81(11), 40.
- Camanho, N., Deb, P., & Liu, Z. (2012). Credit rating and competition.
- Chakraborty, I., Saretto, A., & Wardlaw, M. (2016). The Trust Alternative.
- Chan, L. K., Karceski, J., & Lakonishok, J. (2007). Analysts' conflicts of interest and biases in earnings forecasts. *Journal of Financial and Quantitative Analysis*, 42(4), 893-913.
- CNB. (n. d.). *The credit rating of the Czech Republic*. Online https://www.cnb.cz/en/monetary_policy/inflation_reports/2011/2011_IV/boxes_and_annexes/zoj_2011_IV_box_2.html, consulted on April 2017.
- Cornaggia, J., Cornaggia, K. J., & Xia, H. (2016). Revolving doors on wall street. *Journal of Financial Economics*, 120(2), 400-419.
- Covitz, D. M., & Harrison, P. (2003). Testing conflicts of interest at bond rating agencies with market anticipation: Evidence that reputation incentives dominate.
- Crotty, J. (2009). Structural causes of the global financial crisis: a critical assessment of the 'new financial architecture'. *Cambridge journal of economics*, 33(4), 563-580.
- Deb, P., & Murphy, G. (2009). Credit rating agencies: An alternative model. London School of Economics working paper.
- Deb, P., Manning, M. J., Murphy, G., Penalver, A., & Toth, A. (2011). Whither the credit ratings industry?.
- Dittrich, F. (2007). The credit rating industry: competition and regulation.
- Doherty, N. A., Kartasheva, A. V., & Phillips, R. D. (2012). Information effect of entry into credit ratings market: The case of insurers' ratings. *Journal of Financial Economics*, 106(2), 308-330.
- Duan, J. C., & Van Laere, E. (2012). A public good approach to credit ratings—From concept to reality. *Journal of Banking & Finance*, 36(12), 3239-3247.
- ECB. (n.d.). *Debt Securities*. Online https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/securities_issues/debt_securities/html/index.en.html, consulted on March 2017

- ECB. (n.d.). *List of financial institution*. Online https://www.ecb.europa.eu/stats/financial_corporations/list_of_financial_institutions/html/index.en.html, consulted on May 2017.
- Eling, M., & Hau, H. (2015). Structured debt ratings: Evidence on conflicts of interest. *Journal of Financial Economics*, 116(1), 46-60.
- Ekins, E. E., Calabria, M. A., & Brown, C. O. (2011). Regulation, market structure, and role of the credit rating agencies.
- ESMA. (n.d.). CRA Authorisation. <https://www.esma.europa.eu/supervision/credit-rating-agencies/risk>, consulted on April 2017.
- ESMA Technical Advice. (2015). *Technical Advice on reducing sole and mechanistic reliance on external credit ratings*. Online https://www.esma.europa.eu/sites/default/files/library/2015/11/esma-2015-1471_technical_advice_on_reducing_sole_and_mechanistic_reliance_on_external_credit_ratings.pdf, consulted April 2017
- Estrella, A. (2004). The cyclical behavior of optimal bank capital. *Journal of banking & finance*, 28(6), 1469-1498.
- European Court of Auditors. (2015). *EU supervision of credit rating agencies – well established but not yet fully effective*. Online http://www.eca.europa.eu/Lists/ECADocuments/SR15_22/SR_ESMA_EN.pdf, consulted on April 2017.
- Frost, C. A. (2007). Credit rating agencies in capital markets: A review of research evidence on selected criticisms of the agencies. *Journal of Accounting, Auditing & Finance*, 22(3), 469-492.
- Griffin, J. M., Nickerson, J., & Tang, D. Y. (2013). Rating shopping or catering? An examination of the response to competitive pressure for CDO credit ratings. *Review of Financial Studies*, 26(9), 2270-2310.
- Güttler, A., & Wahrenburg, M. (2007). The adjustment of credit ratings in advance of defaults. *Journal of Banking & Finance*, 31(3), 751-767.
- He, J. J., Qian, J. Q., & Strahan, P. E. (2012). Are All Ratings Created Equal? The Impact of Issuer Size on the Pricing of Mortgage-Backed Securities. *The Journal of Finance*, 67(6), 2097-2137.
- Hilscher, J., & Wilson, M. (2016). Credit ratings and credit risk: Is one measure enough?. *Management Science*.

- Investopedia. (n.d.). *Skin in the game*. Online <http://www.investopedia.com/terms/s/skininthegame.asp>, consulted February 2017.
- Kashyap, A. K., & Kovrijnykh, N. (2016). Who should pay for credit ratings and how?. *Review of Financial Studies*, 29(2), 420-456.
- Kedia, S., Rajgopal, S., & Zhou, X. (2014). Did going public impair Moody's credit ratings?. *Journal of Financial Economics*, 114(2), 293-315.
- Lang, W. W., & Jagtiani, J. A. (2010). The mortgage and financial crises: The role of credit risk management and corporate governance. *Atlantic Economic Journal*, 38(3), 295-316.
- Listokin, Y., & Taibleson, B. (2010). If you misrate, then you lose: Improving credit rating accuracy through incentive compensation.
- Liu, P., & Thakor, A. V. (1984). Interest yields, credit ratings, and economic characteristics of state bonds: An empirical analysis: Note. *Journal of Money, Credit and Banking*, 16(3), 344-351.
- Lynch, T. E. (2008). Deeply Persistently Conflicted: Credit Rating Agencies in the Current Regulatory Environment. *Case W. Res. L. Rev.*, 59, 227.
- Mankiw, G. N., & Taylor, M. P. (2011). *Economics*. (Tosi, Trad) Bruxelles : De Boeck. (Original Book published in 2006).
- Mathis, J., McAndrews, J., & Rochet, J. C. (2009). Rating the raters: are reputation concerns powerful enough to discipline rating agencies?. *Journal of monetary economics*, 56(5), 657-674.
- Medvedev, A., & Fennell, D. (2011). An economic analysis of credit rating agency business models and ratings accuracy.
- Mishkin, F. S. (2010). *Monnaie, banque et marchés financiers*. (Bordes, Hauteceur, Lacoue-Labarthe, Ragot, Trad). Pearson Education France. (Original Book published in 2004).
- Moody's. (n.d.). *History of KMV*. Online <http://www.moodysanalytics.com/About-Us/History/KMV-History>, consulted May 2017.
- Mulligan, C. M. (2009). From AAA to F: How the credit rating agencies failed America and What can be done to protect investors. *BCL Rev.*, 50, 1275.
- OECD (2010). *Competition and credit rating agencies*. OECD Hearing. Online <https://www.oecd.org/competition/sectors/46825342.pdf>.

- Pagano, M., & Volpin, P. (2010). Credit ratings failures and policy options. *Economic Policy*, 25(62), 401-431.
- Partnoy, F. (1999). The Siskel and Ebert of financial markets: two thumbs down for the credit rating agencies. *Wash. ulq*, 77, 619.
- Partnoy, F. (2009). Overdependence on credit ratings was a primary cause of the crisis.
- Ponce, J. (2012). The quality of credit ratings: a two-sided market perspective. *Economic Systems*, 36(2), 294-306.
- Rafailov, D. (2011). The failures of credit rating agencies during the global financial crisis—causes and possible solutions. *Economic Alternatives*, 1, 34-45.
- Rhee, R. J. (2015). Why credit rating agencies exist. *Economic Notes*, 44(2), 161-176.
- Richardson, M., & White, L. (2009). Rating agencies: More regulation or less?. *Restoring Financial Stability: How to Repair a Failed System*.
- Schwarcz, S. L. (2009). Regulating complexity in financial markets. *Wash. UL Rev.*, 87, 211.
- SEC. (1994). Nationally Regnized Statistical Rating Organizations. Online <https://www.sec.gov/rules/concept/34-34616.pdf>, consulted on March 2017.
- SIFMA (2016). *AFME Securitisation Data Report, Fourth Quarter 2015*. Online <http://www.sifma.org/research/item.aspx?id=8589959288>, consulted on March 2017.
- Skreta, V., & Veldkamp, L. (2009). Ratings shopping and asset complexity: A theory of ratings inflation. *Journal of Monetary Economics*, 56(5), 678-695.
- Smith, R. C., & Walter, I. (2002). Rating agencies: is there an agency issue?. In *Ratings, rating agencies and the global financial system* (pp. 289-318). Springer US.
- The Economist. (2008). Status Cuomo. Online <http://www.economist.com/node/11506815>, consulted on March 2017.
- Tichy, G. (2011). Credit rating agencies: Part of the solution or part of the problem?. *Intereconomics*, 46(5), 232-262.
- Utzig, S. (2010). The financial crisis and the regulation of credit rating agencies: A European banking perspective.
- White, L. J. (2002). The credit rating industry: An industrial organization analysis. In *Ratings, rating agencies and the global financial system* (pp. 41-63). Springer US.
- White, L. J. (2010). Credit-rating agencies and the financial crisis: less regulation of CRAs is a better response. *Journal of international banking law*, 25(4), 170.

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