

LEGISLATIVE PRESSURE AND CREDIT RATING AGENCY BEHAVIOR

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Abstract

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This study investigates whether legislative pressure influences credit rating agency (CRA) behavior. It covers a time period in which the European Union moves from exerting minimal to intense legislative pressure on CRAs, providing an almost ideal context for analyzing if and how CRAs are affected by this pressure. Two possible outcomes are discussed: 1) more timeliness in the flow of information and 2) more stickiness in the flow of information. The analysis is based on an examination of market reactions following CRA announcements between 2000 and 2019. The results show that the market reactions after CRA announcements decrease when legislative pressure increases. The interpretation is that as legislative pressure increases, the flow of information from CRAs becomes stickier. This confirms that legislative initiatives that put pressure on CRAs have an effect, evidence that legislators' intention to change behavior by threatening or initiating new regulations works, which confirms assumptions underlying the theory of legislative threats (Halfteck, 2008). A reasonable interpretation of legislators' push for changes in this context is that they want to see a faster flow of information. The results, however, show the opposite. A plausible explanation for this is increased caution on the part of CRAs because if in retrospect, the information in an announcement turns out to be wrong or misleading, the ensuing criticism could lead to additional pressure.

Keywords: Credit Rating Agencies, Legislative Pressure, Stickiness, Timeliness

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1. INTRODUCTION

It has been many years since the big corporate scandals (e.g., Enron, WorldCom, Parmalat, and Ahold) of the early 21st century and the financial crisis of 2007–2008. Nevertheless, the direct consequences of these events remain and continue in the form of previously initiated and still partially ongoing regulatory processes. Inherent in this reality lies the dynamic between participant bodies and the pressure some of these bodies face. In some cases, participants find themselves in a totally new

circumstance, having gone from being very little affected by regulations to being in the eye of regulators and having to consider what the intensified regulatory environment means for them. The aim of this study is to shed light on governance through pressure within the regulative process.

Coffee (2006, 2009) discusses the failure of a group of so-called gatekeepers, auditors, corporate attorneys, securities analysts, and rating agencies in the wake of the Enron scandal (Coffee, 2006) and the financial crisis of 2007–2008 (Coffee, 2009). He identifies a number of reasons why gatekeepers'

expected role could be questioned. An obvious reason for the failure of gatekeepers was that their relationship with companies — or, more specifically, their relationship with agents within the company — was too tight. Another reason was that the market for gatekeeper services was imperfect and, in some cases, close to an oligopoly, allowing “rival” firms to behave less zealously towards each other and even act in collusion. A third explanation was that prior types of disciplining aspects, such as the value of gatekeepers’ reputational capital and exposure to litigation, had decreased over the years, and gatekeepers had loosened the reins. In this latter sense, the role of credit rating agencies (CRAs) came under particular scrutiny (Coffee, 2006).

In retrospect, investors and creditors, in particular, have wondered why CRAs waited to lower credit ratings to below investment grade until they discovered shortcomings that jeopardized a company’s future or until just days before bankruptcy (three major CRAs maintained investment-grade ratings on Enron’s bonds until five days before the company declared bankruptcy). Some argue that this behavior is the ultimate proof that CRAs care only about themselves, as they are the only gatekeepers, besides auditors, with the opportunity to reveal the truth of these kinds of scandals. Given their special access to confidential information, protected by law in the U.S., CRAs were probably aware of doubts about the accounting practices of several of the scandal-involved companies and likely knew or suspected that those companies’ valuations were based on fraud, but still chose to be passive (Bonsall, Green, & Muller, 2018; Coffee, 2006, 2009; Darbellay, 2013; Edwards, 2013; Hill, 2002, 2004, 2010; Miglionico, 2019; Möllers & Niedorf, 2014; Partnoy, 2017; Picciau, 2018; Scalet & Kelly, 2012; White, 2013).

In the aftermath of these events, the very need for CRAs has been questioned. Their *raison d’être* has been challenged, despite the theoretical argument that their position within the corporate governance system leads to a reduction in information asymmetry in the market and, thus, a better information environment (Langohr & Langohr, 2008; Partnoy, 2007; Rhee, 2015; Rousseau, 2006; Staikouras, 2012). The critique has also triggered debates and discussions about the role that CRAs play in the larger context. Legislative bodies have increasingly been paying attention, and CRAs have, as a consequence, become included in various regulations. This is particularly evident in the EU, which has gone from having no EU-level (i.e., supranational) regulation of CRAs to having a number of regulations affecting them, including rules regarding the use of credit ratings as a basis for risk measures (safety and soundness regulations) as well as rules that regulate the industry itself (Alcubilla & del Pozo, 2012; Langohr & Langohr, 2008; Möllers & Niedorf, 2014; Picciau, 2018; White, 2019). This development is unique when it comes to central corporate governance mechanisms, as CRAs represent a participant body and present an opportunity to study how similar bodies may act under similar conditions.

More specifically, this study focuses on whether CRA behavior has changed in response to

legislative pressure¹ on CRAs in the EU context. There are two central dimensions of possible behavioral change when it comes to CRAs: timeliness and stickiness of information flow. These have been important topics in discussions about CRA failures over the years. In many cases, CRAs have been criticized for acting with low transparency in the pre-process of revisions as well as reacting slowly when a basis for revision occurs, as in the case of Enron. Interestingly, the CRA industry has stubbornly argued that their publications must have certain stickiness in order to prevent the market from responding too reflexively and that a rating is a measure of risk that is based on risk assessment over a so-called cycle. The industry often claims that rating revisions can have a disproportionate impact at the system level if CRAs are not cautious. Accordingly, pressure to respond quickly to the publication of new information is set against the fear of being accused of having an unreasonable impact on the system (Altman & Rijken, 2006; Darbellay, 2013; Eijffinger, 2012; Frost, 2007).

The remainder of this paper is organized as follows. Section 2 includes a theoretical point of departure and the derivation of hypotheses, and Section 3 addresses the study’s empirical methodology. In Section 4, the results and analysis are presented. Robustness checks are presented in Section 5, and the conclusions are discussed in Section 6.

2. THEORY AND HYPOTHESES

Rhee (2015) claims that “rating agencies promote the use of information even as they create little new information” (p. 168) and that CRAs are unique among actors within the financial system in that because they have a methodology that can benchmark across a row of different instruments, they cover the entire spectrum of the vast credit market. He argues that CRAs create conditions for a more efficient market because, given their skills, they reduce the effort required by other market participants that do not use their help, for example, investors who assess risk. According to Rhee (2015) two scenarios can explain the consequences if CRA services are not present: either the investor ignores the CRA’s analysis of risk assessment, which, in turn, means that the investor has to add a risk factor that increases their return requirements, or the investor needs to acquire a CRA’s skills on their own, which requires sufficient resources. However, given their narrower focus and limited resources, investors lack the ability to efficiently use collective assessments and benchmark information in the same way and to the same extent as a CRA can (Darbellay, 2013; Husisian, 1990; Langohr & Langohr, 2008; Rhodes, 1996; Rousseau, 2006; Sy, 2009; White, 2002, 2019). According to Rousseau (2006), CRAs have several advantages over investors in regard to judging credit risk. First, CRAs have better access to information and more time to gather and sort it; they often have unique access to confidential or inside information as well. In addition, CRAs have

¹ The expression “legislative pressure” can be related to the theory of legislative threats, which explains how the process behind potentially upcoming legislation, as well as the implementation of the legislation itself, can pressure changes in behavior; legislative pressure is regarded as an effective tool to control behavior (see Halfteck, 2008).

developed a special skill for setting a risk-based ranking for different issuers, and this has enabled them, over time, to accumulate a critical mass of comprehensive information/data about companies. This allows them to give generally viable relative measures of credit quality (Darbellay, 2013; Hill, 2004; Langohr & Langohr, 2008). Rhee (2013a, 2013b) explains the importance of CRAs more precisely. By providing broad coverage of the credit market, systematizing information, establishing a consistent set of ratings, and offering an effective informational pedagogy for the whole credit market, CRAs have a huge positive effect on the financial market's information environment, which infuses a general trust in the market.

This picture, however, can be nuanced. As noted in the introduction, recurrent company scandals and financial crises have been the basis for a debate about the role of CRAs in the financial system (Coffee, 2006, 2009; Miglionico, 2019; Partnoy, 2002; Picciau, 2018; Rousseau, 2006; Rhee, 2015; White, 2019). Most recurrent are the critiques questioning whether CRAs truly convey pertinent information to the market, even though, in theory, their role is commonly considered contributing to an effective information environment by channeling private information to the market and thereby reducing information asymmetry. In that sense, the debate has often focused on toughening legislation on the CRA industry (Gonzalez et al., 2004; Hill, 2004; Rousseau, 2006; White, 2010). It is, however, also possible to find a brighter picture of CRAs in discussions following these kinds of events, in line with the first part of this section. For instance, there are claims that CRAs provide a cost-effective solution to gathering and sorting information and that they are important because they can be used to mitigate information asymmetry in capital markets and to solve the principal-agent problem by valuing the amount of risk that managers adopt on owners' behalf. Such arguments have resulted in the recommendation that the use of CRA services is formalized through different types of legislation (Rhee, 2015; Sy, 2009). These examples of differing views show that the CRA industry potentially faces two kinds of pressure. On the one hand, there is pressure to be more active as a formalized actor within the financial system (i.e., to take on a role specified through legislation) and thereby contribute to the market's trustworthiness. On the other hand, there is pressure to deal with threats of legislative elements that could potentially limit the industry's services and self-determination. For this precise reason, it makes sense to think about the impact this kind of legislative pressure can have and to consider legislative threat theory as a theoretical point of departure.

According to Halfteck (2008), the process of legislative threats is similar to a game wherein legislators put pressure on an entity such as a corporation, industrial sector, or profession by threatening to exercise a legislative mandate if that entity does not alter its behavior to align it with the legislator's demands. Under certain conditions, legislative threats induce entities to modify their conduct and abandon targeted practices to avert the consequences of the potential implementation of the legislation. As such, legislative threats are,

according to the theory, a powerful mechanism to which legislators (and other kinds of regulators) frequently resort as a means to exercise their institutionalized mandate to govern and control social conduct and organize different parts of society. In this study, it is assumed that pressure not only contains a threat, but could also create a unique opportunity if the service is integrated into the legal framework, e.g., a CRA service is formalized under regulations, and CRAs are simultaneously given a formal right to a constructed market.

2.1. Hypotheses (timeliness vs. stickiness)

Boot, Milbourn, and Schmeits (2006) call CRAs "information equalizers" and argue that perhaps all investors use ratings in one way or another as a basis for rationalizing their investment decisions. They claim that CRAs play the role of information processing agencies, contributing to faster dissemination of information to the financial market than would be possible in a market without their presence. All of these explanations provide an understanding of the critiques following the Enron scandal and the financial crisis of 2007–2008, i.e., that CRAs did not respond quickly enough and that their ratings were useless for decision-making since they lacked timeliness (Hill, 2004; Miglionico, 2019). If seeing CRAs as an important intermediary for channeling information from/about companies to the external market, it is obvious that the expectation is that the information they transfer/produce will be valid, reliable, and timely enough to be useful for decision-making². Frost (2007) argues that a reasonable expectation is that, as information intermediaries, CRAs will immediately change their ratings in response to changing conditions and make this information publicly available without delay. He also claims that, as a result, the information CRAs announce will, if it is relevant, lead to a fast market reaction since it is, with high probability, new for the external market participants. The first hypothesis is stated as follows:

H1: Legislative pressure will increase the timeliness of CRAs' information flow.

While expectations may suggest that fast communication of new information and rapid rating revisions are obvious goals of CRAs, it is not clear that this is really the case. Achieving these goals may not even be possible. To begin with, there is an inherent lag in the flow of information to the market, as getting and disseminating information takes time. This is especially true when it comes to collecting less-than-optimistic information from companies (Ahn, Bonsall, & Van Buskirk, 2019). In addition to this very practical matter, CRAs often voice the need for some inertia in their ratings. They argue that because an important part of their role is to exhibit stability, credit ratings should be perceived as an assessment of credit risk over a "cycle", which comprises a methodology characterized by stickiness and conservatism (Cantor & Mann, 2003, 2009; Cociorva, 2018). The "through-the-cycle methodology" means

² Timeliness is one of the main qualitative characteristics within the International Financial Reporting Standards (IFRS) conceptual framework. In the IFRS, the definition of timeliness is stated as follows: "Timeliness means that information is available to decision-makers in time to be capable of influencing their decisions" (IFRS, 2018).

that changes should be made only when there is strong and validated support; things that can affect a company's credit risk in the short term and are deemed as transient are given relatively little weight in the credit analysis process. Uncertainty in regard to the stability of change over the long term should be handled with caution. The logic is that this approach protects issuers from being unreasonably affected by rapid movements. For example, institutional investors governed by hard threshold regulations pertaining to rating levels can face unreasonable consequences in terms of their portfolios if they must always consider revisions based on short-term fluctuations with uncertain outcomes³. Thus, CRAs often claim that if there is reason to believe that the basis for a revision is a temporary fluctuation or contains uncertainties, they should wait to implement the revision until the basis is confirmed as solid (Altman & Rijken, 2006; Cociorva, 2018; Frost, 2007).

A more conspiratorial explanation by critics of CRAs when it comes to their stickiness in rating revisions is that issuers of securities that pay fees for credit ratings do not want to see rapid downgrades, and the CRAs are therefore acting in their own self-interest. Through fast downgrades, CRAs risk creating a strained relationship with their paying clients, which, of course, poses a threat to their future turnover and profits (White, 2009). A similar explanation is that CRAs keep their resources at a minimum level after giving an initial rating and strongly resist quick adjustments; as such adjustments require large investments in staffing, which, in turn, could directly affect their profits (White, 2010). CRAs are likely concerned about their reputation as well, which could suffer if rapid adjustments are later shown to have been overly hasty and perhaps incorrect. Thus, CRAs may want time to ascertain validity, and this leads to stickiness (Miglionico, 2019). Kempf (2020) reinforces this idea, finding that individual analysts working at CRAs, while eager to demonstrate a solid track record, are nonetheless inhibited by fear of failure; they want to ensure their analyses are well-supported, and this slows the process of upgrading or downgrading. The second hypothesis is stated as follows:

H2: Legislative pressure will increase the stickiness of CRAs' information flow.

It is not far-reaching to claim that timeliness versus stickiness represents a tension between the rating industry and legislators. Timeliness has often been at the center of attention in regard to what has failed in the wake of scandals, and it is also an aspect that legislators have highlighted as important to improve in order to correct a dysfunctional market. However, they also often put forward the importance of stable and correct validated ratings, which, as discussed above, is often the industry's response to criticism and the main argument for not speeding up the information flow, but instead keeping a certain level of stickiness. Accordingly, how CRAs' behavior will change as a result of legislative pressure is uncertain. On the one hand, it is reasonable to assume that they will move towards more timeliness, in line with

the legislators' demands; on the other hand, it is also reasonable to assume that they will stick to their conviction that ratings require a certain stickiness and that increased legislative pressure will reinforce this need if that pressure stems from critiques of prior failures. It is therefore relevant to study the effect of legislative pressure on the basis of both the two hypotheses mentioned above and it is important to notice that these are not null hypotheses of each other, but rather alternative paths to behavioral change.

3. METHODOLOGY

3.1. Time frame of legislative pressures in the EU

CRAs were absent from the EU's regulatory framework until the beginning of the 21st century but came to the fore in the wake of the major corporate scandals in the early 2000s. For example, CRAs' role in the financial market was one of several important issues discussed at the Oviedo Informal ECOFIN Council in April 2002, which was a direct response by legislators to the Enron scandal. Shortly thereafter, within the framework of the Commission's Financial Services Action Plan (FSAP), the Commission highlighted CRAs' role in the financial market and recommended that the CRA industry establish policies and procedures to ensure that ratings are fairly presented and conflicts of interest disclosed (Commission Directive/125/EC of 22 December 2003). A further follow-up was the resolution of the roles and methods of CRAs that the EU Parliament had drawn up at the beginning of 2004. The Parliament called on the Commission to work to integrate CRAs into legislation by formalizing their role in the same way their role is formalized in U.S. regulations. It also emphasized the need to regulate the CRA industry more directly through, for example, formalized supervision and monitoring, but pointed out that regulation must not be about regulating the content of a rating. In short, it argued that the focus should be on process rather than content intervention (European Parliament resolution on role and methods of rating agencies 2003/2081(INI)).

In 2004, the Parmalat scandal (also called Europe's Enron) led to more intensive work regarding the regulation of EU financial markets. At the EU level, the Commission, Parliament, and member states identified their main concerns with regard to CRAs and regulations. The Commission considered that robust due diligence was needed, and in July 2004, it asked the Committee of European Securities Regulators (CESR) to provide it with technical analysis and advice to assess the need for introducing European legislation or other solutions. CESR provided this advice in March 2005. CESR concluded that there was no need for formal regulations but instead made reference to the voluntary code of conduct developed by the International Organization of Securities Commission (IOSCO) as a basis for self-regulation for the CRA industry. This code had its overarching focus on three areas that were assumed to reinforce CRAs' role in the financial market: 1) the quality and integrity of the rating process, 2) CRAs' independence and avoidance of conflicts of interest, and 3) CRAs' responsibility towards public investors and issuers

³ Within the CRA literature, this is discussed as a smoothing behavior to avoid the so-called cliff effect. Going from investment grade to non-investment grade is often given as an example wherein CRAs act with high caution and inertia (Cantor & Mann, 2009; Sy, 2009; Eijffinger, 2012).

(CESR, 2005; IOSCO, 2004). The EU Commission agreed, in line with the principle of better regulation, which calls for being careful about implementing legal regulations and being open to self-regulation to achieve public policy objectives. At the same time, the Commission gave CESR responsibility for monitoring voluntary compliance with the IOSCO Code (Sy, 2009).

Alongside this development, several initiatives were introduced within the progress of FSAP in which CRAs were integrated as a formal part of EU legislation. The legislators apparently observed the benefits of being able to refer to CRA ratings in a variety of contexts where risk levels were important to regulate in some form. The EU Commission became increasingly influenced by the way a nationally recognized statistical rating organization (NRSRO) was used in U.S. regulations to create thresholds for risk levels. European lawmakers came to increasingly refer to the ratings of so-called generally recognized CRAs in line with NRSROs in the U.S. In European legislation, these were called External Credit Assessment Institutions (ECAIs) and were first used as a basis for determining risk level requirements for EU financial institutions' minimum capital requirements in Capital Requirements Directive 2006/48/EC. This was part of the first Capital Requirements Directive package, which implemented the Basel II agreement within the EU's legal framework. The directive also included a number of recognition criteria for ECAIs, stipulating that they must comply with standards of objectivity, independence, ongoing scrutiny, credibility, and transparency, which can be seen as a direct reference to the expectation that they comply with the standards of the IOSCO Code (Directive 2006/48/EC).

When a new financial crisis emerged in 2007-2008 and it became clear that CRAs was a key player in this crisis, the EU Commission acted quickly and changed its views on self-regulation of the industry. It decided to introduce stricter legislation that included more restrictions on CRAs and their ratings. In line with this, it issued an advisory document in mid-2008 that was closely followed by a formal proposal for new legislation that included the regulation of CRAs (European Commission, 2008b); the regulation (CRA 1) was approved in September 2009 (Regulation (EC) No 1060/2009) and came into force in December 2010. This process allowed legislators to integrate the principles of the IOSCO Code into formal regulation and to address perceived shortcomings of the code, namely, that it is too widely held, contains no direct sanctions, and, like many other self-regulation codes, gives room for the "follow or explain" principle (European Commission, 2008a). This regulation represented a tightening of the CRA rules and, above all, focused on regulating the CRA industry within the EU (albeit with a focus on ECAIs). The legislators' initiatives, however, did not stop there. Even before the 2010 regulation had come into full force, a process of designing further legislation to tackle issues that were not sufficiently addressed in that regulation was initiated by the EU Commission, which invited stakeholders to comment on its demands for future legislation (European Commission, 2010). This process continued between June 2010 and January 2011, and in May 2011,

a supplement to CRA 1, called CRA 2 (Regulation (EU) No 513/2011), was issued. In this supplement, the European Securities and Markets Authority (ESMA) obtained exclusive supervisory powers over CRAs registered in the EU in order to centralize and thereby facilitate monitoring at the European level. ESMA's comprehensive power to monitor CRAs included the ability to request documentation and data, carry out on-site inspections, require persons to appear for questioning, and assume responsibility for applications and registration. ESMA was also given the mandate to impose administrative sanctions, fines, and periodic penalty payments (Regulation (EU) No 513/2011).

After this initiative, the discussions around legislation that focused or touched on CRAs changed. At this point, CRAs had become integrated into legislation similarly to CRAs in the US; but the EU went further in framing what could be expected of CRAs and the conditions under which CRAs, now securely formalized within the EU's financial system, should be regulated in the future. Several events had illuminated the risk of relying too much on CRAs, especially because the market for CRAs was very concentrated, almost an oligopoly. The main concern was that both the legislature and the market itself had transferred risk assessment to a few commercial players, which created a vulnerable situation for the financial system. In June 2011, the EU Parliament issued a non-legislative report on CRAs, explaining how to look at these issues and what needed to be done to rectify them. Its focus then turned to the risk of over-reliance on credit ratings by financial market participants, the high degree of concentration in the rating market, and, to a certain extent, the remuneration models used by CRAs. It was suggested that it might be time to create opportunities for smaller CRAs to enter the market by supporting the creation of networks of smaller CRAs. The Parliament even discussed whether it was appropriate to establish a European Credit Rating Foundation and support the establishment of a civil liability regime (European Parliament, 2011).

The last major concrete change occurred in 2013 with another amendment to the 2009 directive (CRA 3). The amendment again emphasized a reduced dependency on CRAs in risk assessment, the need to reduce the risk of conflicts of interest in the rating process, the assurance of high-quality ratings, clarification of CRAs' responsibility, and the need to improve conditions for increased competition in the CRA market. The amendment created a much more detailed piece of legislation than the previous version of the directive, with clear thresholds and sanctions (Regulation (EU) No 462/2013). Since then, discussions about the role of CRAs within the EU have continued, with a strong focus on the risk of relying too much on CRAs in risk assessments.

As the foregoing shows, the legislative context surrounding the CRA industry has undergone an interesting evolution in the EU, moving from almost complete non-regulation to a high degree of regulation, with CRAs/ratings controlled in one way or another. Not only have legislators tightened the requirements for how CRAs are expected to act, but they have also given them mandates within the legislative framework. From the perspective of

legislative threat theory, it seems reasonable to expect that this evolution has put pressure on and thereby affected the industry. Having a role formalized through legislation creates a closed and secure market for CRAs and probably an increased demand for their services as well. This is an attractive situation for the CRA industry. It would therefore be reasonable to surmise that the industry faces inherent pressure to meet legislators' expectations in order to maintain this position. In the case of CRAs, the risk of losing their position must be considered, as recent discussions about reduced dependence on CRAs and measures taken to increase competition no doubt create a fear of diminished importance. The other side of the coin is direct pressure from legislation focused on regulating the industry, with laws setting out how CRAs should act and under what conditions. Laws that, for example, require ethical considerations about conflicts of interest, demand increased quality in terms of timeliness and content, establish a framework for trials against fraudulent behavior, and provide sanctions create pressure for a particular behavioral response.

3.2. Data

In this study, the empirical data on credit rating announcements were collected from Moody's homepage, and all other data were downloaded from Thomson Reuters Eikon/Datastream. Since the aim was to capture changes in behavior over time and use the developments in the EU as a basis, the search was delimited to companies in EU countries and with a history of ratings by Moody's over the selected time period, i.e., 2000–2019. Given that larger companies have been subject to ratings to a greater extent than smaller companies, the search was initially focused on "large-cap" stock lists and continued downwards with respect to company size until it was determined that finding more companies with ratings over the time period would be unlikely. Similarly, given that ratings for companies in several EU countries are rare, the search focused on countries with at least some tradition of companies with ratings. Based on these parameters, the initial search proved very comprehensive. After the first stage, it turned out that further delimitation was needed. For one thing, there are often several announcements on a specific day, which can be explained by the fact that a CRA often conducts analysis for several different kinds of ratings (short-term debt, long-term debt, etc.) at the same time and announces them separately. Since the effect of new information, no matter its type is relevant and the study's methodology for measuring the dependent variable precludes distinguishing the effects of different same-day announcements, all announcements issued on the same day were treated as one announcement event. Further, the information registered for each company also differs in regard to how directly it can be linked to the specific company. Most registered announcements include information with a focus on a specific company. However, they also include some general information that cannot be expected to cause a market reaction. Some announcements, for instance, contain only the name of the company (probably for internal use at Moody's). These kinds

of announcements were excluded. A further limiting factor was that the data beyond what was captured from Moody's homepage had to be available in Thomson Reuters Eikon/Datastream for the time period pertaining to each company and sufficient in amount.

The final sample consisted of 111 companies in 12 EU countries (Austria, Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Portugal, Spain, Sweden, and the UK), with a total of 11,172 recorded announcements. The distribution of the announcements across the countries is shown in Table 1 and over the years in Table 2.

Table 1. Number of rating announcements by country

<i>Year</i>	<i>Number of announcements</i>
Austria	176
Belgium	306
Denmark	328
Finland	524
France	1,482
Germany	1,453
Italy	868
Netherlands	744
Portugal	213
Spain	1,066
Sweden	1,136
UK	2,876
Total	11,172

Table 2. Number of rating announcements by year

<i>Year</i>	<i>Number of announcements</i>
2000	176
2001	178
2002	194
2003	271
2004	285
2005	505
2006	231
2007	470
2008	396
2009	513
2010	561
2011	770
2012	832
2013	595
2014	632
2015	846
2016	1,044
2017	1,006
2018	914
2019	753
Total	11,172

3.3. Research design

This study uses a methodology inspired by the classical event-study design (Dodd & Warner, 1983; Brown & Warner, 1985), a commonly used methodology to measure the stock market reaction to the announcement of a particular event. However, it differs from a classic event study in a couple of ways. First, a classical event study sets one specific event date (for example, the day a given regulation comes into force) and measures variables before and after this single event. This methodology, however, does not capture the effects of a process exhibiting slow, ever-increasing pressure over a period of time. This study, in contrast, uses three reconciliation points rather than one, which means that the time variable is divided into three regulatory pressure levels. Second, the calculation of the dependent

variable in a classical event study typically uses data for the same specific date for every case. For this study, because announcements are spread over the entire time period, it would be impossible to capture data around one or a few specific dates without missing the vast majority of possible observations. Consequently, the calculation of the dependent variable uses individual announcement dates as a basis. The following variables are used to investigate the association between credit rating announcements and stock market reactions.

3.3.1. Dependent variable

To determine whether a company-specific stock market reaction is connected to CRA announcements, the cumulative abnormal return (CAR) is used. The methodologies for quantitative event studies using the abnormal return on stock prices include market models, mean-adjusted models, and market-adjusted models, which offer different ways to capture abnormal reactions in the aftermath of an event. They examine returns for a specific company during an event period in relation to the “normal” distribution of the company’s stock price outside the event period and/or the market’s general return during the event period (Peterson, 1989). In this study, the methodology is based on the market-adjusted model, and the abnormal return is calculated for firm i in time period t using the following formula:

$$AR_{it} = R_{it} - R_{mt} \quad (1)$$

R_{it} is the return for the specific stock of company i on day t , and in this study, this figure is calculated using the following equation: $1 - (r_{i(t-1)})/r_{it}$. R_{mt} is the return of the market m (based on the stock market index matching the specific company) on day t and is calculated using the following equation: $1 - (r_{m(t-1)})/r_{mt}$.

The market-adjusted model methodology can be perceived as the least sophisticated of the models mentioned above since it uses only data close to the event period to achieve the normal distribution of returns; in contrast, the other models use prior periods disconnected from the event period to capture the normal distribution for the specific stock, and the market, in general, is used as a benchmark to compare the stock’s trend in the event period. However, since this study is based on an analysis in which each observation is one specific event, the advantage of the market-adjusted model is that the risk for overlap decreases. For example, by using 100 days in a time frame before the event to achieve a normal distribution for a specific company or/and the market’s general trend, there is a high likelihood that this period will cover another CRA news event (see Dyckman, Philbrick, and Stephan, 1984; Brown and Warner, 1980 for a discussion about the risk for “event smearing”).

AR_{it} is used in the next step to achieve CAR by accumulating abnormal returns for firm i over the trading days, beginning with day $t-1$ and ending with day $t+3$ ⁴.

$$CAR_{t-1 \rightarrow t+3}^i = \sum_{t=t-1}^{t+3} AR_{it} \quad (2)$$

Since many underlying data points are used to calculate CAR, where any outliers could have a very large impact on the final calculation, the data were winsorized at the 1% level (top and bottom), and the corresponding dependent variable name in the main regression model is therefore CAR_{win} .

3.3.2. Independent variables

The independent variable, *RA-PERIOD*, is the time period in which the announcements fall. As described in Sub-section 3.1, the announcements are divided into three periods: 2000–2002, 2003–2010, and 2011–2019. The logic behind this division is that it enables a clearer distinction between different levels of legislative pressure. The period up to 2003 is considered a non-pressure period. Between 2003 and 2010, the debate about new regulations increased, discussions about integrating the IOSCO Code took place, ECAIs were introduced, and CRA 1 was approved. Beginning in 2010, an even more intensified debate occurred, and a series of initiatives, including CRA 2 and CRA 3, was implemented in legislation.

3.3.3. Control variables

Market reaction resulting from new information is affected both by companies’ willingness to supply information to the market and by the quality of that information. Even though CRAs often have better access to companies than most investors do, they are affected by managers’ power over the distribution of information. One assumption connected to this phenomenon is that managers of financially stressed companies are more willing to implement earnings management and have a low incentive to reveal high-quality information to the market if doing so is not in line with their own interests. Therefore, in this study, three control variables were selected to capture different dimensions of financial stress. The first is the leverage ratio (*LEV*), which is measured by total debts divided by total assets. The leverage ratio is a typical source of financial stress for a company (Rajan & Zingales, 1995), and companies in financial stress have a greater incentive to use earnings management (Jelinek, 2007), which makes the foundation for ratings and investment decisions more uncertain (Morgan, 2002). With a similar basis but capturing short-term financial stress, the second control is for the working capital ratio, i.e., financial liquidity, measured by current assets divided by current liabilities. Prior research (Gopalan, Song, & Yerramilli, 2009) suggests that this variable can affect the basis for ratings and investment decisions in the direction of greater uncertainty. Due to skewness, the natural logarithm of this variable is used (LIQ_{log}). The third control connected to financial stress is the return on equity (*ROE*), measured as net income divided by shareholder equity. It is a measure of how efficiently management

⁴ Since the daily reaction is measured, beginning on the news event day and continuing for two additional days, by calculating the stock price for each day in relation to the day before, -1 is the base value for calculating the abnormal return on day 0. The logic behind this approach is that the news can result in

a reaction in day 0, depending on the precise time of the announcement and the stock market’s opening hours.

generates income and growth in relation to the company's equity financing, which can affect earnings management and contribute to a more opaque information environment, leading to greater uncertainty in both ratings and investment decisions and potentially affecting abnormal returns.

As noted earlier, one factor with the potential to influence how a CRA behaves is the size of the client company. The larger a client is, the more the CRA has to lose if the client leaves due to

dissatisfaction. A possible effect of this is that CRAs become reluctant to announce bad information or information that is not certain/highly validated (White, 2010). Therefore, company size, measured as the consolidated market value of a company in euros, is included as a fourth control variable. Because of the presence of some extreme outlier values, the data were winsorized at the top and bottom 1% level ($SIZE_{win}$).

The main regression model is:

$$CAR_{win} = \alpha + \beta_1(RA - PERIOD)_t + \beta_2LEV_{it} + \beta_3LIQ_{logit} + \beta_4ROE_{it} + \beta_5SIZE_{win_{it}} + e_{it} \quad (3)$$

4. EMPIRICAL RESULTS

4.1. Sample and descriptive statistics

Table 3 presents the most relevant descriptive statistics for all the variables. The number of observations for the variables ranges between 11,172 and 6,172. The mean for CAR_{win} is 0.0443, with a standard deviation of 0.0330. The 11,172 observations are distributed over the three periods as follows: 548 in the period 2000-2002; 2,671 in the period 2003-2010; and 7,953 in the period

2011-2019. It must be noted that even though Table 2 shows a relatively steady increase in the number of announcements over time, Table 3 reveals notable differences in the distribution of the announcements according to the time variable. For the majority of the variables, only a few data points are missing or, because of winsorizing, have been eliminated. In regard to the variable LIQ_{log} , however, a larger number of observations are missing. Nonetheless, because of the importance of controlling for short-term financial stress, this variable has been retained in the main regression.

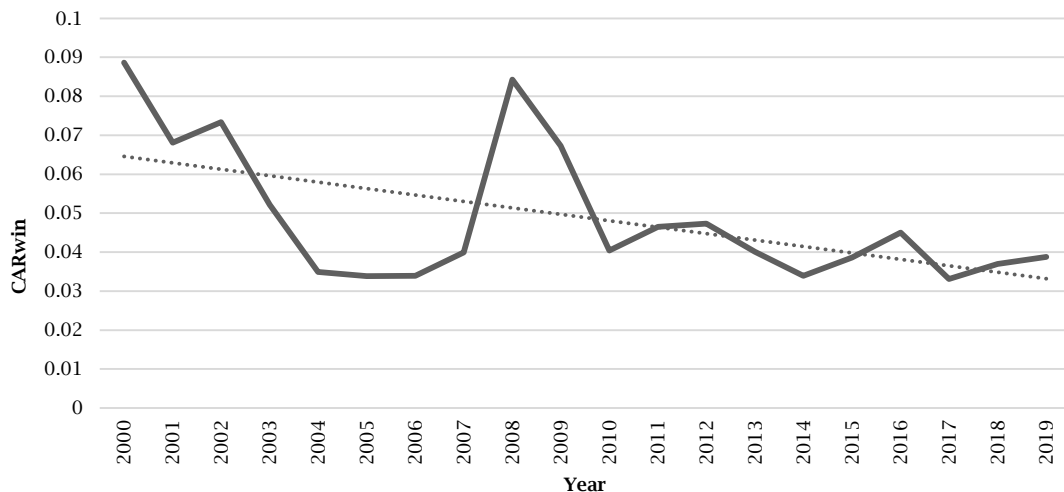
Table 3. Descriptive statistics

Variables	Mean	Standard Deviation	Number of observations
Dependent variable			
CAR_{win}	0.0443	0.0330	10,953
Independent variable			
<i>RA-PERIOD</i>			
2000-2002			548
2003-2010			2,671
2011-2019			7,953
Total			11,172
Control variables			
<i>LEV</i>	29.5542	15.8154	10,394
<i>LIQ_{log}</i>	0.0456	0.6668	6,172
<i>ROE</i>	11.9574	38.4814	10,192
<i>SIZE_{win}</i>	36,300,000	38,700,000	11,023

Figure 1 provides a look at the trend in CAR_{win} over the study period, as indicated by the mean per year. The trend line suggests that further analyses will support a decrease in CAR_{win} over time, i.e.,

support for $H2$. A possible explanation for the upward, short-term spike indicated by the graph in 2008 is the financial crisis of 2007-2008. This will be considered in the robustness check in Section 5.

Figure 1. Mean CAR_{win} by year (with trend line)



4.2. Correlations

Table 4 presents the correlation matrix. The table is a confirmation of the trend visible in Figure 1 and shows, with respect to the independent variable *RA-PERIOD*, a negative correlation (p-value < 0.001) between the dependent variable *CAR_{win}* and the independent variable *RA-PERIOD* (-0.2408).

It also reveals that there is, in general, a low correlation among the included variables, indicating a small risk for multicollinearity. The highest correlation value is found between *LIQ_{log}* and *LEV* (-0.3972), and this was taken into consideration when interpreting the results of a subsequent variance inflation factor test.

Table 4. Correlation matrix (Pearson correlation)

	<i>CAR_{win}</i>	<i>RA-PERIOD</i>	<i>LEV</i>	<i>LIQ_{log}</i>	<i>ROE</i>	<i>SIZE_{win}</i>
<i>CAR_{win}</i>	1.0000					
<i>RA-PERIOD</i>	-0.2408***	1.0000				
<i>LEV</i>	0.0076	-0.0766***	1.0000			
<i>LIQ_{log}</i>	0.0487***	0.0954***	-0.3972***	1.0000		
<i>ROE</i>	-0.1016***	-0.0067	0.0445***	0.1168***	1.0000	
<i>SIZE_{win}</i>	-0.0789***	0.0887***	-0.1267***	-0.0292*	-0.0190	1.0000
	0.0000	0.0000	0.0000	0.0218	0.0557	

Note: ***p < 0.001; **p < 0.01; *p < 0.05.

4.3. Regression analysis

The results of the regression analysis (panel data regression with fixed effects⁵) are presented in Table 5. As seen here, the models show a significant (p-value < 0.001) negative relationship between the dependent variables *RA-PERIOD* and *CAR_{win}*, indicating that the cumulative abnormal return after a rating announcement decreases over the time the *RA-PERIODs* represent. Of the control variables, *LEV* and *SIZE_{win}* show a significant positive relationship (p-value < 0.01) and *LIQ_{log}* and *ROE* a significant negative relationship (p-value < 0.001) with *CAR_{win}*. Analysis of the results in the variance inflation factor test together with the correlation statistics indicates that multicollinearity should not be a problem. Accordingly, there is support for accepting *H2: Legislative pressure increases the stickiness of information flow from CRAs.*

Table 5. The stock price reaction (*CAR_{win}*) as an effect of credit rating agency announcements (*RA*)

<i>Variables</i>	<i>CAR_{win}</i>
<i>RA-PERIOD</i>	-0.01726*** (-23.98)
<i>LEV</i>	0.00058*** (9.83)
<i>LIQ_{log}</i>	0.00319** (2.94)
<i>ROE</i>	-0.00005*** (-5.70)
<i>SIZE_{win}</i>	0,0000000000878** (2.72)
Constant	0.06833*** (23.90)
N	5,818
R ² (within)	0.118
R ² (areg)	0.233
VIF <i>max</i>	6.13
<i>mean</i>	3.11

Note: ***p < 0.001; **p < 0.01; *p < 0.05.

5. ROBUSTNESS CHECKS

The robustness of the results in Section 4 was examined *vis-à-vis* four potential issues: the time period variable, the financial crisis of 2007–2008, the industry, and corporate governance.

5.1. Time period

The first variable to be tested was the time variable. Although the three different periods in the main model have been defended on the assumption that they represent different levels of pressure, with the intensity increasing from the first period to the last, it is possible that other ways of dividing this variable into periods could lead to different results. Therefore, two additional variants of division were tested. The first was a demarcation between 2000–2006 and 2007–2019, the latter period reflecting when legislation that in one way or another included CRAs could be assumed to have been adopted in practice. The second variant was simply a year-based division. The results are similar to those presented in Table 5, aside from lower R² (R² (within) 5,2% and R² (areg) 17,6% for the first variant; R² (within) 8,9% and R² (areg) 20,1% for the second variant).

5.2. Financial crisis of 2007–2008

The financial crisis of 2007–2008 was just like the big corporate scandals of the early 2000s, and it gave rise to the initiation of legislative pressure on CRAs because they were seen as one of the key players and represented, according to several scholars, the gatekeeper that failed most seriously (Coffee, 2009; White, 2010). According to DeHaan (2017), the criticism towards the CRAs pressured them to change their behavior quickly in order to maintain some form of trust among market participants. The spike in Figure 1 indicates that 2008 was an exceptional year. It was therefore reasonable to test the consequences of DeHaan's (2017) argument, which was done by omitting the 396 observations for 2008 in the main model.

⁵ A Hausman test was carried out to determine whether the fixed effect or random effects model was more appropriate. Results showed that the fixed effect specification was preferred (p < 0.001).

This did not change the results shown in Table 5 in any decisive way, other than that the R^2 values decreased slightly (R^2 (within) 9,7%; R^2 (areg) 21,1%).

5.3. Industry

A control for the industry was also added. The most represented sector for ratings in the sample is the finance industry. This industry is more subject to comprehensive regulations dealing with credit risk and transparency than other industry in the EU, and the regulations governing them was significantly strengthened over the study's time period. The industry is also exceptional in the sense that it holds little inventory or fixed assets, which makes both ratings by rating agencies and investment analysis by investors less complex. Accordingly, both of these parameters could have an effect on the level of abnormal returns after an announcement. This potential effect is controlled by including a dummy variable that is equal to 1 for companies included in the main model that fall within the finance industry. The results from this test are very similar to the results in Table 5 and, accordingly, give no reason to question the results from the main model.

5.4. Corporate governance

During the study time period, the corporate governance landscape underwent a significant change, with more extensive and detailed requirements for companies spelled out in various forms of regulation. In the introduction, CRAs are discussed as one of several gatekeepers. In that discussion about gatekeepers, Coffee's (2006) overall focus is corporate governance, and the gatekeepers he chooses to discuss are presented as sub-mechanisms within a larger corporate governance system. Empirical research in corporate governance often ends up focusing on specific parts of the corporate governance system, but it has also been noted that there may be a reason to look at how those different parts affect each other (Ernstberger & Grüning, 2013). Based on this, it seemed relevant to test whether other corporate governance mechanisms could explain a change in the behavior of CRAs or a general change in abnormal returns after an announcement. For example, could a stronger presence of, say, auditors or company boards, which has been a consequence of strengthened regulation during the time period examined in this study, have an impact on the behavior of a CRA through their link to companies' risk levels. Moreover, the clearer presence of other oversight mechanisms could lead to anxiousness on the part of CRAs to release information quickly or, perhaps, to a greater pressure to validate the information in announcements more thoroughly before releasing them. Consequently, it could be the case that these mechanisms exert pressure in different directions depending on the company's relationship with the CRA. They could also have a general impact on the information environment. Three variables are in focus here: audit fee, audit committee, and board size (for a discussion of these variables in terms similar to those above, see, for example, Knechel and Willekens, 2006; Wang, 2012). A first test was made by including all three variables in the main model at the same time. This resulted in problems with multicollinearity, both between the added variables

and between the added and original variables. Accordingly, it was deemed inappropriate to run the main model with all three of these variables included at the same time. Additional runs were therefore conducted with each variable included separately. The results reveal no reason for reconsidering the results in Table 5.

6. CONCLUSION

This study is based on the question of whether legislative pressure has any influence on the behavior of an actor at the center of the debate about concrete changes in legislation. Specifically, the study focuses on the development of legislation regulating CRAs in the EU from 2000 to 2019.

CRAs are actors within the financial system, and they are generally assumed to contribute to a good information environment. Rousseau (2006) describes their special role as information intermediaries between a company and the market, given their ability to collect and convert comprehensive information into an easily accessible basis for decision-making. By providing broad coverage of the credit market, systematizing information through a uniform, established and consistent set of ratings, and applying an effective informational pedagogy across the whole credit market, CRAs are expected to have a positive effect on the information environment of the financial market (Rhee, 2013a, 2013b). This expectation is a reasonable basis for how legislators see CRAs, and perhaps the most obvious presumption is that major CRAs will immediately modify ratings in response to changing conditions and make rating information publicly available free of charge and without delay, i.e., the information flow is expected to be characterized by high timeliness. CRAs have also been given a unique position to access private information from companies. As a result, a CRA announcement could be expected to result in a quick reaction on the stock market, since this information is new to external players.

Timeliness has often been the center of attention in regard to failures in the wake of major company scandals and financial crises, and it is also an aspect that legislators have singled out for improvement in order to correct what they viewed as a dysfunctional market in the aftermath of these scandals and crises. They have therefore applied pressure through regulatory initiatives with the expectation of increasing the timeliness of ratings. This background formed the basis for *H1: Legislative pressure will increase the timeliness of CRAs' information flow*. However, this hypothesis is not sufficient, as alternative outcomes deriving from the industry's common response to critique should be considered when analyzing the possible effects of legislative pressure on CRAs. It seems more a rule than an exception that the industry vigorously asserts that it has a responsibility to maintain a certain stickiness to ensure stable and validated ratings. This claim aligns with the market stability argument and the practical argument that the rating process takes time and is based on a "cycle-basis" logic, both of which are particularly important in times of discovered deficiencies in the market (Cantor & Mann, 2003, 2009). As a result, there is reason to believe that CRAs will respond to regulatory initiatives with more stickiness in the information flow. This background formed

the basis for *H2: Legislative pressure will increase the stickiness of CRAs' information flow.*

The results presented here are in line with Halteck (2008), who proposes that legislative pressure induces a modified behavior. There is a significant effect between pressure and behavior, and, at first glance, legislative pressure could be assumed to be a viable strategy for inducing the desired change in behavior. However, further analysis suggests that this strategy is not always efficient. The debates and discussions that ensued in the wake of perceived CRA failures gave clear indications of legislators' expectations: first and foremost, they wanted to see more timeliness in the flow of information from CRAs. Instead, the results confirm *H2*, namely, that the inherent stickiness in CRA information announcements is greater when legislative pressure increases.

The finding that stickiness in information flow increases with greater legislative pressure can be interpreted in several ways. First, it is an indication that legislative pressure to achieve a certain goal can be a risky strategy when different interests aim in different directions and sometimes at each other. If the legislators' goal over the time period examined here was to achieve more timeliness in information announcements from CRAs, it is clear that they have failed. Instead, the results fit well with the CRAs' usual defense in times of crisis and criticism: that it is wrong to complain about their lack of timeliness because they have responsibilities and methodologies that necessitate careful consideration and a certain amount of stickiness in their announcements. For example, that it would be irresponsible not to take into account that rapid revisions can damage market stability and that a through-the-cycle methodology takes time. The results can also be explained by CRAs' fear of legislative pressure aimed at, for example, regulations that put them at greater risk of exposure and litigation and that seek to clarify their accountability. The results of this study show that CRAs have become more cautious over the years and are willing to accept criticism for being slow and for simply announcing already known news or news that does not affect decision-making directly. Timeliness versus stickiness has been presented as something that represents the tension between the rating industry and legislators. This study adds fuel to this fire since it shows that the industry's change in behavior is probably the opposite of what legislators intended and expected. It also adds an important empirical contribution to the legal threat theory in that it shows that a state of pressure can have unexpected effects and can also present actors under pressure with opportunities to take advantage of the situation for their own gain. This is especially important for policymakers to understand because it

shows the necessity of considering unexpected behavioral changes and being aware that legislative pressure as a strategy in policymaking may contain inherent risks for negative outcomes.

This study supports the idea that governance strategies within the legislative process should be considered in the corporate governance context and that, within this context, it is reasonable to integrate influences from the legislative threat theory. A suggestion for future research is to shed light on the different categories of threats addressed in this theory and paint a clearer picture of how the expectations of legislators are fulfilled depending on the category of threats. The results also reveal a need for more empirical research on the legislative process and its effects. Future studies could take a closer look at the actors involved in and influenced by the process and investigate the level of awareness of legislators' strategies for governance and how these strategies are handled by different parties involved in and affected by regulatory processes.

A number of limitations in this study are worth noting. To begin with, the data from credit rating agencies were retrieved only from Moody's. The reason for this was that the data were available over a longer period of time, and Moody's makes the data available in a way that renders downloading manageable. Moody's is one of the major credit rating agencies and has a large share of the total market. At the same time, differences in coverage exist at the national level among, in particular, Moody's, Fitch, and Standard and Poor's. Using data from all three of these CRAs and comparing their respective results could shed light on whether behavioral changes resulting from regulatory pressure depend on the specific credit rating agency. It could also be useful to nuance the focus of rating announcements, as the outcome of positive versus negative news could differ. This would provide greater clarity on whether a credit rating agency's decision to get information out fast or retain certain stickiness depends on the nature of the announcement. Another limitation is the comparability of this study's results with the results of studies using a more classical event-study design. An alternative could be to break the study time period into smaller but more focused parts. For example, the time just before CRA 1 was introduced could be used to show how the legislator acted, and the time shortly after could be used to show the effect of a specific law. This type of approach would be more consistent with the more classic event-study design. The disadvantage, of course, is that different forms of threats in the process would be missed, and the process is the main component in this study.

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