View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by Archivio istituzionale della ricerca - Università di Brescia

Available online at http://www.akpinsight.webs.com

The Governance of Credit Rating Agencies in the European Regulation:
The Right Way to Enhance Market Competition?

Dr.Francesca Gennari, (PhD)

Department of Business Administration, Faculty of Economics,
University of Brescia
Contrada Santa Chiara, 50 – 25122 Brescia
Italy

Dr.Luisa Bosetti, (PhD) (corresponding author)

Department of Business Administration, Faculty of Economics,
University of Brescia
Contrada Santa Chiara, 50 – 25122 Brescia
Italy

ABSTRACT

Since 2007 financial markets worldwide have been suffering from a confidence crisis which has emphasised the discussion about the Credit Rating Agencies (CRAs) and the opportunity to enhance the competition in such a highly concentrated sector. The reform process, carried out by European and American regulators, aims at reinforcing the external surveillance on CRAs and, at the same time, improving the governance of the agencies in terms of board composition, internal control systems and disclosure. After an in-depth and comparative analysis of the legal rules, the article shows and discusses the results of an investigation focalised on the contents and quality of the disclosure of 32 selected CRAs, with the purpose of foreseeing the future competitive conditions in the European rating market, since the new European Regulation should break the oligopoly of the largest American agencies by introducing minimal governance requirements.

Key words: Credit rating agencies, regulation (EC) 1060/2009, competition, NRSROs, ECAIs, governance.

1. INTRODUCTION

Credit rating agencies (CRAs) are specialised in evaluating the credit risk: they issue opinions on the creditworthiness of private and public issuers and the reliability of financial instruments. A rating is an opinion on the probability that a loan or another financial instrument will not be entirely and timely repaid and will fall into default (Amtenbrink & De Haan, 2009; European Commission, 2006).

Since ratings steer the choices of many investors, a large debate has risen about the ratings' quality, the independence of CRAs from rated issuers and the opportunity to enhance the competition in such a highly concentrated sector, where almost all of the ratings are issued by three CRAs (Standard & Poor's Ratings Services, Moody's Investors Service and Fitch Ratings).

Copyright © 2011. Academy of Knowledge Process

This topic has attracted the attention of policy makers and scholars, who have stressed the potential conflicts of interests within the issuer-pay business model, the most adopted by CRAs, as well as the need for improvement in the CRAs' governance, rating processes and transparency.

The subprime crisis has brought CRAs under fire; as a matter of fact, it has accelerated the reform process that some countries were already carrying out. Indeed, CRAs have certainly played a role in the diffusion of the crisis, due to the investment grade ratings they have assigned to issuers (like Lehman Brothers, Fannie Mae, Freddie Mac and AIG) that very soon became insolvent. Moreover, the CRAs have often evaluated structured financial instruments in the creation of which they had taken part, arousing perplexity on their objectivity in the rating judgement. In their efforts to get over the crisis, European and American regulators have introduced and enhanced respectively the external surveillance on CRAs; besides, both of them have imposed rules on internal control, independence, management of conflict of interest and disclosure.

In the light of the above-mentioned premises, this article has two purposes, based on different but integrated research phases. First of all, we summarise some weaknesses in rating sector stressed in the business economics literature (section 2), as a starting point to comparatively analyse the contents of the reforms as concerns external surveillance, control in corporate governance and internal control (section 3). After that, our research acquires an empirical nature: we show and discuss the results of an investigation aimed at verifying the contents and quality of the disclosure divulged by some selected CRAs, in order to identify both the deficiencies and the best practices internationally adopted (section 4) and to advance some considerations on the future evolution of competition in the rating sector (section 5).

2. LITERATURE REVIEW

Up to now, the studies on CRAs have mainly adopted a financial point of view (Ashcraft & Schuermann, 2008; Coval, Jurek, & Stafford, 2009; Hull, 2009; Lim, 2008; Yay, 2010). Due to the economic crisis started in 2007 (Buiter, 2007; Crouchy, Jarrow, & Turnbull, 2008; Diamond & Rajan, 2009; Felton & Reinhart, 2008, 2009; Friedland, 2009; Kolb, 2010; Masera, 2009) some scholars have also underlined the most important weaknesses of the rating sector, linked to the CRAs' organisational structure, their functioning, the relationships with the issuers of financial instruments, the questionable quality of ratings, the low competition and the deficiencies in surveillance by public authorities. Most of these problems can be ascribed to the lack of mandatory provisions specifically addressed to CRAs, which has characterised the international context until the second half of this decade.

An extensively debated aspect concerns CRAs' business models. In offering their service of credit worthiness evaluation, CRAs help issuers meet investors. Ratings are frequently based on information – even sensitive and confidential – that CRAs raise from the issuers, thanks to their cooperation (European Commission, 2006): CRAs rarely use only public information. Since ratings help reduce information asymmetry between the issuer and the investor (IOSCO, 2008; Listokin & Taibleson, 2010), they are usually sold by CRAs as economic services. Based on the part who requires and pays for the assessment service, we can distinguish between two main business models (Justensen, 2009; Mathis, McAndrews, & Rochet, 2009; Richardson & White, 2009).

The *issuer-pay model* is the most utilised one. Its name stresses the issuer's active role in the rating process: indeed, the issuer applies to one or more CRAs to be comprehensively evaluated as a borrower ("issuer rating") or to obtain the assessment of a specific financial instrument he intends to offer to the market ("instrument rating"). As a compensation for the evaluation service, the issuer pays fees to the CRA (usually on an annual basis), and these payments originate the CRA's revenues: there is consequently a clear conflict of interests for CRAs (Buiter, 2007).The ratings paid by an issuer are normally made public as a signal of the reliability of the issuer or the financial instrument. An investment grade rating (that means a good rating) reassures the investors about the probability to obtain interests and

 Copyright © 2011. Academy of Knowledge Process

the redemption of their money; from the issuer's point of view, it helps collect money and pay low interest rates. Summarising, ratings contribute to the definition of credit terms.

The virtuous working of the issuer-pay model should guarantee effective rating processes, thanks to the mentioned cooperation between the CRA and the issuer in phase of information collection and analysis. It is in the issuer's interest to be transparent, supplying the CRA with all the information necessary for a satisfactory rating. Nevertheless, the issuer-pay model determines two dangerous risks: the risk that the CRA is too indulgent towards the issuer that pays for the rating, and the risk that the issuer hides or manipulates information to obtain a better rating.

Unfortunately, these risks have come true in recent years, causing the issue of poor-quality and untruthful ratings, used by the financial players in a very undiscriminating and uncritical way. After the investors have discovered this situation, their mistrust in CRAs started to increase.It is difficult to oppose the effects produced by the large use of the issuer-pay model, because it characterises the three biggest CRAs dominating the sector worldwide. Only few small CRAs operate with a different business model, defined *investor-pay* or *subscriber-pay model:* in the investor-pay model, the investor requires and pays for the rating in order to found investments on a professional and objective opinion concerning the issuer's creditworthiness. Anyway, the investor-pay model makes it impossible for the CRA to obtain confidential information on the issuer evaluated, since there is no direct relationship between these two parts. As a consequence, the ratings paid by the investor depend exclusively on public information.

Another problem regards the validity of ratings in time. In fact a rating may become misleading for the market if the CRA that has issued it does not periodically monitor or lately updates it, staying in a state of "inertia" (Conti, 2010; Matthews, 2009). For example, the three largest CRAs have maintained investment grade ratings for companies like Lehman Brothers and AIG until few days before their collapses.

Similarly, the CRAs have neglected to update and modify their rating methodologies, adopting the traditional ones for long to assess also the sophisticated structured financial instruments (Brancaccio & Fontana, 2011; Danielsson, 2008).Sometimes the CRAs have even utilised wrong economic forecasts (Bawden, 2008) and overestimated the international economic perspectives, transferring this excessive confidence into the ratings; then, they have maintained their ratings at an investment grade to prevent panic and to avoid worsening the delicate economic situation.

A large part of criticism towards CRAs is also due to their involvement as consultants in structuring the sophisticated financial instruments they have afterwards positively assessed (Mariano, 2008; Portes, 2008). On the one hand, this kind of behaviour has favoured the "rating shopping" phenomenon (Portes, 2008; Spreta & Veldkamp, 2009), on the other hand it has deceived the market in relation to the reliability of financial instruments deriving from the securatisation of subprime loans. In point of fact, such instruments were so complex that investors could not easily understand and evaluate them on their own, so they relied on ratings issued by CRAs (Hull, 2009). Unfortunately, these ratings were usually the result of the cooperation between a CRA and the issuer, who had made use of rating analysts' help to structure new instruments in the highest compliance with the CRA's rating methodologies (Buiter, 2007; Fender & Mitchell, 2005; Financial Stability Forum, 2008; Financial Services Authority, 2009; Conti, 2010). In other terms, many issuers of structured products have looked for the best evaluation by means of a sort of preventive rating shopping at one or more CRAs, which used to operate as consultants during the phase of structuring; after that, the same CRAs had no interest in withdrawing their own original opinion, so they used to assign and maintain high ratings for such instruments. What is more, these CRAs were the only keepers of the information necessary to assess those structured products, due to their internal complexity. Being

Copyright © 2011. Academy of Knowledge Process

the other CRAs operating in the sector much smaller, they were unable to issue unsolicited and therefore uncompensated ratings, which could have been more neutral.

Low competition in the rating market has also concerned policy makers and academicians. Indeed, the rating sector is highly concentrated, given that Standard & Poor's, Moody's and Fitch detain together more than 90% of the market all over the world (SEC, 2009).This oligopolistic structure discourages the entry of new CRAs, which would have difficulty in achieving a sufficient market share to survive economically. The three largest CRAs' reputation is a barrier to entry into a sector dominated by the issuer-pay model, where the issuers usually choose their raters.

High concentration is also due to the difficulty for small CRAs to issue unsolicited ratings based only on public information. Effective competition lacking, the quality of ratings issued by the largest CRAs has undoubtedly decreased. Nevertheless, the entry of new CRAs into the sector is not a sure solution to all the problems: indeed, small CRAs could be conciliatory towards the issuers, at least at first, in order to rapidly reach a satisfactory position in the market (Conti, 2010; Katz, Salinas, & Stephanou, 2009).

All the phenomena we have described derived, among other things, from the wide trust in market self-regulation, which should have guaranteed the automatic punishment of unfair behaviour. The mechanisms of self-regulation have failed in recent years, because of the grave lack of transparency on CRAs' activity and governance. Among other things, this situation is attributable to the nature of unlisted companies that characterises even the largest CRAs, which have been free from mandatory rules on disclosure for long time: CRAs were not accountable to the markets, financial regulators, governments or global financial entities (Stone, 2008).

In spite of the signals that a strong change was indispensable, regulators have delayed their intervention, relying on the respect for the IOSCO principles and code of conduct regarding CRAs' activities.However, the economic meltdown has imposed substantial modifications, determining the issue of mandatory provisions finalised at: identifying specific authorities for the rating sector, charged with powers of surveillance and intervention towards the CRAs, and obliging the CRAs to establish control bodies and to activate internal procedures of corporate governance and control based on independence, prevention of conflicts of interests and transparency.

3. REGULATORY FRAMEWORKS ON RATING AND CRAS

This section describes the most important laws and self-regulations that should be a turning point for the rating sector in this century, influencing CRAs' formal recognition, corporate governance and functioning. First of all, we consider the IOSCO voluntary provisions, which are addressed to the CRAs all over the world; then, we analyse the legislations adopted by the EU and the USA. Our study intends to identify recommendations and rules concerning CRAs' corporate governance, external and internal control and disclosure to surveillance authorities and markets, as a premise to the following empirical research.

a) The IOSCO principles and code of conduct

IOSCO was the first international organisation to publish rules of conduct for CRAs. Such provisions are contained in the "IOSCO statement of principles regarding the activities of credit rating agencies" (September 2003) and the "Code of conduct fundamentals for credit rating agencies" (December 2004, revised in May 2008): these documents should improve the protection of investors that rely on rating, on the one hand, and correctness, efficiency and transparency in the financial markets where the CRAs operate, on the other hand.

The IOSCO provisions are voluntary and flexible in their implementation. CRAs can adopt them independently of their own country of origin; nevertheless, if national laws and regulations exist, they prevail on the IOSCO provisions. Even if the IOSCO provisions are not mandatory, IOSCO recommends that CRAs include these measures in their individual codes of conduct. More exactly, each CRA should

 Copyright © 2011. Academy of Knowledge Process

publish its code of conduct on its website, explaining if and where the code deviates from the IOSCO model and how it permits all the same the achievement of IOSCO's purposes ("comply or explain" principle). The IOSCO provisions concern two main aspects: the internal control and the stakeholder communication (Table 1). IOSCO does not provide any measures instead about corporate governance and supervision by external authorities.

Table 1: Summary of the IOSCO Principles and Code of Conduct

Internal control	External communication
• Prohibition of consulting services on financial instruments to be rated • Management and disclosure of conflicts of interests • Analyst rotation • Analysts' compensation independence from CRA revenues • Analyst independence from any other businesses of the CRA • Rigour of rating methodologies and models • Adequacy of human and financial resources to rating activities • Reliability of information used in rating processes • Conservation and treatment of documents • Confidential information treatment • Periodic review of rating methodologies and models • Introduction of a review function; where feasible and appropriate, it should be independent • Introduction of an independent compliance function	• List of ancillary services • Description of rating methodologies, hypotheses and models • Disclosure of modifications to rating methodologies, hypotheses and models • Periodical communication of historical default rates of CRA rating categories • List of the key clients originating at least 10% of the CRA total revenue • Information on compensation policies • Description of actual and potential conflicts of interests

b) The EU legislation

The UE legislation on CRAs consists of several directives, regulations and guidelines.Directive 2003/6/EC on insider dealing and market manipulation (market abuse) states that if an issuer decides to allow a CRA to access to inside information, the CRA would owe a duty of confidentiality. The correlated Directive 2003/125/EC explains that credit ratings do not constitute investment recommendations; nevertheless, this Directive stipulates that CRAs should consider adopting internal policies and procedures designed to ensure that credit ratings are fairly presented and that they are objective, independent and accurate. Moreover, it states that CRAs disclose any significant interests or conflicts of interests concerning the financial instruments or the issuers to which their credit ratings relate.The Capital Requirement Directive (CRD, comprising Directives 2006/48/EC and 2006/49/EC) introduces the definition of *External Credit Assessment Institution* (ECAI), consequently to Basel Accords. This is the first time that the European Commission is specifically interested in a particular type of CRAs, the activity of which makes it necessary to implement an external preventive surveillance finalised at the official recognition of the ECAI status.

The need for mandatory rules valid for all the CRAs operating within the EU has stimulated the European Parliament and the Council to adopt Regulation (EC) No. 1060/2009, which is currently under review as for the articles concerning competent authorities in order to reconcile the Regulation with the reformed structure of the European financial control authorities (ESMA in particular).

The Regulation is intended to modify a sector in which self-discipline prevails, also due to an express choice of the European Commission that recommended CRAs to adopt the IOSCO voluntary code of conduct (Communication 2006/C 59/02).Considering the specificity and importance of the ECAI discipline and Regulation (EC) No. 1060/2009, we describe their main contents paying attention to control procedures and external communication.

The ECAI discipline

The importance of ECAIs is due to Basel II Accords, in consequence of which ECAIs' credit ratings can be used by banks as a basis for capital requirement calculations in the Standardised Approach and, with reference only to securitisation exposures, in the Internal Ratings-Based Approach.

 Copyright © 2011. Academy of Knowledge Process

For our purposes, it is convenient to summarise the requirements a CRA must possess to be recognised as an ECAI according to the following provisions:

- Directives 2006/48/EC and 2006/49/EC, as amended by Directives 2009/27/ EC, 2009/83/ EC and 2009/111/ EC (in course of transposition into the national laws by the EU Member States);
- the CEBS[1] Guidelines of 2006, which are currently under review to guarantee their consistency with the mentioned directives[2].

These rules arrange a system of external and internal controls on ECAIs and impose transparency; this is manifest from the recognition procedure, introduced in 2006 and recently modified in order to expedite the checks by the national competent authority, if the CRA has already been registered in accordance with Regulation (EC) No. 1060/2009.

The procedure of ECAI recognition stresses the key role of national bank authorities as external supervisors on ECAIs. The national bank authorities have the power to require information and they operate with the support of CEBS, the EU body responsible for issuing guidelines (regulatory function).
A CRA is recognised as an ECAI within the boundaries of the EU-country the bank authority of which has received, assessed and accepted the application. Applicants can be CRAs themselves, but also other institutions (usually banks) that intend to use an ECAI's ratings for risk-weighting purposes.

The application is presented to the national competent authority, which must verify the compliance of some elements with specific criteria ("direct recognition"): therefore the competent authority activates external preventive controls on eligible ECAIs' structures and processes. Anyway, if the CRA has already obtained the ECAI status in another Member State, the competent authority is not obliged to carry out its own direct recognition process: it can confirm the ECAI status conferred by the authority of the other EU-country (indirect recognition), thanks to a provision oriented to encourage cost reduction and procedure simplification. In this sense, CEBS has recommended that the competent authorities of all the Member States adopt the suggested procedures in order to reach the greatest possible convergence in the approach and in the assessment within the EU.

The application should be supported by comprehensive, transparent and appropriately documentation so that the competent authority can evaluate the adequacy of the CRA to be recognised as an ECAI. Information should include a general introduction of the CRA and all the details useful for the verification of the technical criteria set out in the CRD with reference to both rating methodology (objectivity, independence, on-going review, transparency and disclosure) and individual credit assessments (rating credibility and market acceptance, transparency and disclosure of individual credit assessments)[3].

Table 2 summarises the most important rules contained in the CEBS Guidelines of 2006 concerning the external supervision, the internal control and the disclosure of the ECAIs. No provision exists in relation to their corporate governance.

---

[1] CEBS (Committee of European Banking Supervisors) has been replaced by EBA (European Banking Authority) since 1 January 2011.

[2] In March 2010 CEBS issued a consultation paper to collect suggestions and opinions about the draft revised Guidelines on the recognition of ECAIs, based on the modifications imposed by Directives 2009/27/ EC, 2009/83/ EC and 2009/111/ EC.

[3] Thanks to the amendments to the CRD, the technical criteria concerning the rating methodology are considered implicitly verified if the CRA has already been registered in compliance with Regulation (EC) No. 1060/2009.

 Copyright © 2011. Academy of Knowledge Process

Table 2: Summary of ECAI Provisions

External supervision	Internal control	External communication
• Regulatory function: assigned to CEBS/EBA • Inspection function: assigned to each national competent authority • Power to require information: assigned to each national competent authority	• Management and disclosure of conflicts of interests • Analysts' compensation independence from ECAI's revenues • Analyst independence from any other businesses of the ECAI • Rigour of rating methodologies and models • Adequacy of human and financial resources to rating activities • Introduction of a review function	• Confidential information to the competent authority as concerns the ECAI's organisational structure, the revenue from the key clients and the financial statements of the past three years. The dissemination to the public of the mentioned information is subject to the prior consent of the ECAI. • Description of rating methodologies, hypotheses and models

Regulation (EC) No. 1060/2009

The ECAI discipline does not exhaust the EU provisions on rating, because not all the CRAs apply for and obtain the status of ECAI. Moreover, each EU Member State could enforce the ECAI discipline in a different way from the others, due to the national validity of the ECAI recognition. The delicate situation of the financial markets during the world economic crisis has stressed the need for a significant reform of the rating sector, in order to restore reliable guarantees for the investors. Thus, the EU regulators have set a coordinated system of mandatory rules oriented to: charge selected authorities with tasks of preventive and on-going, direct or indirect supervision on CRAs; affect the CRAs' bodies and activities of governance and control and the CRAs' external communication, in the interest of the investors and the other stakeholders; enhance the international uniformity as regards the operational functioning of CRAs and the supervision on the part of the competent authorities.

In order to fulfil these purposes, the European Parliament and the Council of the European Union have adopted Regulation (EC) No. 1060/2009, which intends: first, to ensure that CRAs avoid (or manage) conflicts of interest in the rating process; second, to improve the quality of the rating methodologies and the quality of ratings; third, to increase transparency by setting disclosure obligations for CRAs; fourth, to ensure an efficient registration and surveillance framework, avoiding "forum shopping" and regulatory arbitrage between EU jurisdictions[4].The Regulation applies to credit ratings issued by CRAs registered in the Community and which are disclosed publicly or distributed by subscription.

The Regulation sets a complex control system on CRAs, structured in three levels; each level includes various processes and it is more pervasive than the previous one for the CRA organisation.The first level regards the external control procedures: these are currently co-ordinated by CESR/ESMA[5] and carried out by the competent authorities of the EU Member States, which deliberate on the CRA initial registration and on-going permanence in the rating sector within the EU borders.

The second level concerns the control procedures implicit in corporate governance: these belong to the CRA's board of directors or supervisory board[6], particularly to the independent members, who shall be at least one third of the board, shall have sufficient expertise in financial services and structured instruments and shall receive a compensation not linked to the CRA business performance.

The third level refers to the internal control procedures that aim at: avoiding conflicts of interest; verifying the quality of information used in the rating process; reviewing methodologies, models and key

[4] Regards the context and the objectives of Regulation (EC) No. 1060/2009, please refer to the Explanatory Memorandum in the Proposal for the Regulation, document COM(2008) 704 final.

[5] ESMA (European Securities and Markets Authority) has replaced CESR (Committee of European Securities Regulators) since 1 January 2011.

[6] The competent board depends on the corporate governance model adopted by the CRA within the limits established in the national laws it is governed by.

Copyright © 2011. Academy of Knowledge Process

rating assumptions ("review function"), adopting an independent approach; monitoring the compliance of the CRA and its staff with the obligations set by the Regulation ("compliance function"), by means of an independent department.The three levels of control are strictly interrelated and participate together in developing an effective and transparent corporate governance in CRAs, so that the investors' expectations for CRA proper behaviour and management can be satisfied. In particular, the Regulation subordinates the CRA registration by the competent authority to the observance of operational requirements that the compliance officer, the analysts in charge of the review and the directors they refer to shall monitor.

Moreover, the Regulation emphasises the importance of communication for maintaining effective relationships between the CRA and its external stakeholders. In this sense each CRA shall disseminate:

1. Information to prove its independence, disclosing the ancillary services to rating activities it has performed, the amount of revenue it derives from its key clients, its actual and potential conflicts of interest and its compensation policies;
2. Information on ratings and the rating process (description of methodologies, models and assumptions, as well as their modifications; historical default rates; etc.);
3. An annual "Transparency Report" with details on the CRA's legal structure and ownership, corporate governance, allocation of staff, internal control mechanisms and revenue composition (distinguishing between fees from credit rating and non-credit rating activities).

Table 3 pays attention to the main contents of Regulation (EC) No. 1060/2009 in the fields of external supervision, control in corporate governance, internal control and external communication.

Table 3: Summary of Regulation (EC) No. 1060/2009

External supervision	Control in corporate governance	Internal control	External communication
• Regulatory function: assigned to CESR/ESMA • Inspection function: assigned to each national competent authority • Power to require information: assigned to each national competent authority	• Appointment of independent members in the CRA board of directors or supervisory board (at least one third, but no less than two) • Independent members' compensation not linked to the CRA's business performance • Independent members' term of office: pre-agreed, not exceeding five years and not renewable. • Sufficient expertise in financial services by the majority of the board of directors or supervisory board, including the independent members. • In-depth knowledge and experience of structured finance by at least one independent member and one other member of the board.	• Prohibition of consulting services on financial instruments to be rated • Management and disclosure of conflicts of interests • Analyst rotation • Analysts' compensation independence from CRA's revenues • Analyst independence from any other businesses of the CRA • Rigour of rating methodologies and models • Adequacy of human and financial resources to rating activities • Reliability of information used in rating processes • Conservation and treatment of documents • Confidential information treatment • Periodic review of rating methodologies and models • Introduction of an independent review function • Introduction of an independent compliance function	• Minimum mandatory disclosure, contained in the annual "Transparency Report" published on the CRA website • List of ancillary services • Description of rating methodologies, hypotheses and models • Disclosure of modifications to rating methodologies, hypotheses and models • Six-month communication of historical default rates of CRA rating categories • List of the key clients originating at least 5% of the CRA total revenue • Information on compensation policies • Description of actual and potential conflicts of interests • Description of internal control for the prevention and management of conflicts of interests.

 Copyright © 2011. Academy of Knowledge Process

c) The US provisions

The Credit Rating Agency Reform Act (CRARA) of 29 September 2006 was the first important legislation for the rating sector in the United States. The Congress published the CRARA in reply to the corporate scandals that had originated perplexities on the CRAs' activity at the beginning of the millennium. In this respect the CRARA pursued a better quality of the rating processes in order to protect the investors and the public interest by enhancing accountability, transparency and competition in the sector.

Until that moment CRAs were used to operate with an actual autonomy, because their activity was usually considered as a form of the freedom of the press established by the First Amendment of the US Constitution. Nevertheless, in 1975 the Securities and Exchange Commission (SEC) began to exercise its supervision on CRAs, a rather formal than substantial control consisting in managing the procedure for the recognition of CRAs as *Nationally Recognized Statistical Rating Organizations* (NRSROs) by means of "no-action letters".

The reform of 2006 was an attempt to reduce the weaknesses of the rating sector, which were among the others:

- The formal role of the SEC;
- The circularity of the recognition process based on the no-action letters, which privileged the largest CRAs with good reputation in the investment community (Coskun, 2008) and made it more and more difficult for the other CRAs to obtain the NRSRO status;
- The lack of mandatory rules concerning the CRAs' duties of transparency towards the SEC and the investors.

The CRARA has strengthened the role of the SEC in the NRSRO recognition process, also stressing its regulatory function and its powers to require information and to investigate. In particular, CRAs applying for the NRSRO status must fill in the "Form NRSRO", giving information to the SEC on their legal status, organisation and affiliates, credit rating process and free dissemination, conflicts of interests, code of ethics, credit analysts, analyst supervisors and the compliance officer, their total and median annual compensation, and the largest users of credit rating services by the amount of net revenue earned from them by the CRA. If the SEC recognises the CRA as a NRSRO, it shall require the public dissemination of all non-confidential information contained in the Form NRSRO, for example by means of the CRA website. After the recognition, the NRSRO shall complete the same Form for the SEC and the investors as an annual certification at the end of each year.

In July 2010 a section of *Dodd-Frank Wall Street Reform and Consumer Protection Act* introduced important amendments to the CRARA, including the establishment of a new external supervisor on the NRSROs (the Office of Credit Ratings, within the SEC) and the request for independent directors in the NRSROs' boards. The independent directors are charged with tasks of control in corporate governance; they shall be at least one half of the board (and not fewer than two) and their remuneration shall not be linked to the business performance of the CRA. A portion of the independent directors shall include users of ratings issued by a NRSRO.

Each NRSRO shall also have an internal control system focalised on the rating policies, procedures and methodologies. The NRSRO shall write out an annual report on its internal control system clarifying the responsibilities of management in introducing, maintaining and assessing the internal control structure; moreover, the CEO shall make an annual attestation to the effectiveness of the NRSRO's internal controls.

The US law obliges the NRSROs to implement preventive controls (oriented to avoid the misuse of non-public information and to manage any conflicts of interest), to periodically review rating methodologies

 Copyright © 2011. Academy of Knowledge Process

and models, and to monitor compliance with policies, procedures and rules. As concerns compliance control, the law also requires each NRSRO to establish an independent function.

Table 4 combines the most important provisions on NRSROs from the CRARA of 2006 and the Dodd-Frank Act of 2010 with reference to external oversight, control in corporate governance, internal control and external disclosure.

Table 4: Summary of the CRARA and the Dodd-Frank Act

External supervision	Control in corporate governance	Internal control	External communication
• Regulatory function: assigned to SEC • Inspection function: assigned to SEC • Power to require information: assigned to SEC	• Appointment of independent members in the NRSRO board of directors (at least one half, but no less than two) • Appointment of users of credit ratings issued by a NRSRO as independent directors • Independent members' compensation not linked to the business performance of the NRSRO • Independent members' term of office: pre-agreed, not exceeding five years and not renewable	• Disclosure of consulting services on financial instruments to be rated • Management and disclosure of conflicts of interests • Analyst rotation • Analyst independence from any other businesses of the NRSRO • Rigour of rating methodologies and models • Reliability of information used in rating processes • Confidential information treatment • Periodic review of rating methodologies and models • Introduction of an independent compliance officer, whose compensation shall be independent of the NRSRO's business performance	• Minimum mandatory disclosure, contained in the annual "Form NRSRO" published on the NRSRO website • Annual report on the internal control system and its effectiveness • Description of rating methodologies, hypotheses and models • List of the 20 largest clients selected on the basis of the revenue for the NRSRO • Information on compensation policies • Description of actual and potential conflicts of interests • Description of internal control for the prevention and management of conflicts of interests.

4. THE GOVERNANCE OF A SIGNIFICANT CLUSTER OF CRAS: METHODOLOGY & RESULTS

The purpose of this survey is to express an opinion about the current level of compliance of a significant cluster of CRAs with Regulation (EC) No. 1060/2009, as regards their control systems and voluntary/mandatory disclosure. In fact, today the European Regulation contains the best practices for the financial market protection, since it generally provides stricter requirements than the other regulations in force.

The new Regulation will offer a great opportunity to some CRAs to enter in the European rating market without excessive costs of adaptation. *Vice versa*, for some agencies the Regulation requirements should be an entry barrier because of compliance efforts. Consistently with the theoretical considerations we expressed in the first part of the paper, this survey aims at identifying which types of CRAs are the most inclined to European registration in relation to the current compliance of their governance with the Regulation requirements.

The results will pave the way towards an assessment of the future evolution of competition in the rating sector, since the European Regulation should break the oligopoly of the largest American agencies by introducing minimal governance requirements and enhancing rating comparability.

The survey is organised in three stages:

1. The selection of a significant cluster of CRAs;
2. The specification of the items to be examined in the light of Regulation (EC) No. 1060/2009, and the relevant data collection;

 Copyright © 2011. Academy of Knowledge Process

3. Results and discussion.

CRA selection

At present a complete and reliable schedule of CRAs acting at European and international level does not exist, except for the SEC's list of NRSROs. Regulation (EC) No. 1060/2009, imposing a CRAs central register, will contribute to the improvement of transparency in this sphere.

Therefore, this survey uses a cluster of CRAs already investigated in two previous studies, published in 2009 by IOSCO's Technical Committee (*A Review of Implementation of the IOSCO Code of Conduct Fundamentals for CRAs*) and by CESR (*Report by CESR on Compliance of EU based Credit Rating Agencies with the IOSCO Code of Conduct*) about the compliance with the IOSCO Code. In the opinion of IOSCO's Technical Committee and CESR, the agencies selected in their studies were potentially the most qualified for the registration in accordance with the European Regulation, which was still in progress at the time of the researches.

In our survey, we examine 32 agencies, 18 of which have their seat in a European Member State.To correctly analyse the governance of a CRA, it is necessary to consider the economic and juridical characteristics of its own country as regards:

- The prevailing legal system (*common law* or *civil law*);
- The development of stock markets and the relevant type of corporate control (*market-oriented systems* or *insider systems*);
- The rules concerning the appointment of corporate governance boards and their administrative and supervisory functions (*one-tier models, two-tier models, two-part models*).

These factors can be ties or opportunities that, combined with the agencies' autonomy as regards their ownership, governance and disclosure choices, cause a variety of situations that can be classified only in theory. For this reason, the national peculiarities of governance should not be neglected, even if the harmonisation of rules is a desirable step towards uniformity in rating quality.
Table 5 stresses some significant differences among the 32 CRAs here analysed, with reference to their ownership, country legal system and stock market development, which determine the specific administrative and supervisory system of each CRA.

 Copyright © 2011. Academy of Knowledge Process

Table 5: List of agencies

Agency	NRSRO ECAI	Seat	Corporate governance system in force in the country (*)	Group belonging	Market where the parent company is listed
AM Best Company	NRSRO	USA	One-tier	Parent company	
Austin Ratings		Brazil	Two-part	Austin Holding	
DBRS	NRSRO ECAI	Canada	One-tier		
Egan Jones	NRSRO	USA	One-tier		
Fedafin		Switzerland	One-tier		
Fitch Rating	NRSRO ECAI	USA	One-tier	Fitch Group - Fimalac	Euronext Paris
JCR	NRSRO ECAI	Japan	One-tier Two-part		
LACE Financial	NRSRO	USA	One-tier		
LF Rating		Brazil	Two-part		
Moody's Investors Service	NRSRO ECAI	USA	One-tier	Moody's Corporation	NYSE
Rating and Investment Information	NRSRO ECAI	Japan	One-tier Two-part		
Realpoint	NRSRO	USA	One-tier	Morningstar	
SR Ratings		Brazil	Two-part		
Standard & Poor's Financial Services	NRSRO ECAI	USA	One-tier	Mc Graw Hill	NYSE
AAA Soliditet		Sweden	One-tier	Bisnode Business Information Group	
Assekurata Assekuranz Rating Agentur	ECAI	Germany	Two-tier		
National Credit Rating Agency		Bulgaria	One-tier Two-tier		
Capital Intelligence		Cyprus	One-tier		
Capp&Capp	ECAI	Italy	One-tier Two-tier Two-part	Capp & Capp Value	
Coface	ECAI	France	One-tier Two-tier	Natixis	Euronext Paris
Companhia Portuguesa de Rating		Portugal	One-tier Two-tier Two-part		
ECRAI		Slovakia	Two-tier		
Euler Hermes Rating		Germany	Two-tier	Allianz	Euronext Paris
European Rating Agency		Slovakia	Two-tier	European Rating Agency	
Lince	ECAI	Italy	One-tier Two-tier Two-part	Cerved Group	
MAR Rating		Germany	Two-tier		
PSR Rating		Germany	Two-tier		
RS Rating Services		Germany	Two-tier	Financial Services	
Svensk Kommun Rating		Sweden	One-tier		
The Economist Intelligence Unit		Great Britain	One-tier	The Economist Group	
UC		Sweden	One-tier	Parent company	
URA Rating Agentur	ECAI	Germany	Two-tier		

(*) In the two-part system the Annual General Meeting (AGM) appoints both the Board of Directors and the Board of Auditors. In the two-tier system the AGM appoints the Supervisory Board, which in turn appoints a separate Management Board. In the one-tier system the AGM appoints the Board of Directors, which appoints the Management Control Committee from among its members.

 Copyright © 2011. Academy of Knowledge Process

It is important to underline that some of the agencies we investigate in this research are recognised as NRSROs and/or ECAIs. The contemporary presence of both the status for many extra-EU agencies draws attention to their global activity[7]; *vice versa*, European agencies are characterised by a more local activity. The 32 agencies have been further subdivided in clusters on the basis of the regulation governing their activity and leaving their geographical location out of consideration (Table 6):

- 10 agencies are NRSROs (also considering in this cluster the agencies doubly recognised as NRSRO and ECAI. Indeed, NRSRO recognition requirements are more restrictive than ECAI recognition ones);
- 5 agencies are ECAIs (excluding the agencies recognised as NRSROs and ECAIs at the same time);
- 17 agencies currently have no recognition.

Finally, each cluster have been further subdivided in relation to the adoption of a code of ethics inspired by IOSCO Code of conduct. In our opinion this classification can be useful to a qualitative evaluation about the agencies' level of compliance with the European Regulation. Table 6 shows the classification of the agencies used for the survey.

Table 6: Classification of agencies

	With Code	Without Code	Total
NRSROs	10	-	10
ECAIs	5	-	5
Others	11	6	17
Total	**26**	**6**	**32**

Data collection

In the next step of the survey we identified the items to be verified. Since Regulation (EC) No. 1060/2009 requires what we can currently consider the international best practice about credit rating and CRAs' governance, we selected its articles on control in corporate governance, internal control and disclosure, in accordance with the model proposed in the first part of the paper: these articles express the items for our empirical verification.

We listed all the items in specific Excel worksheets, where we recorded all the results for each CRA. The results are summarised in this article by means of tables where data are processed. For data collection, we made use of codes of conduct, policies and all other information and documents about the agencies' governance available on the CRAs' web sites from September to November 2010.

We are conscious that voluntary disclosure could not fairly represent the governance of an agency: the absence of non-compulsory information does not necessarily involve the inexistence of the fact. Nevertheless, the present trend of rules suggests a progressive international harmonization in regard to external and internal control. In future, transparency in communication could be a key factor in establishing competitive advantage. In the light of the general observance of common requirements (aimed at guaranteeing independent, comparable and high-quality ratings), the excellence in the rating sector will depend on the ability of each CRA to appreciate the relationships with its stakeholders through a constant and transparent communication.

Data analysis and results

In this section we describe the findings concerning control in corporate governance (Table 7), internal control (Table 8) and disclosure (Table 9).

[7] Moody's, S&P and Fitch are recognised as ECAI in Bulgaria, Italy, France, Cyprus, Slovakia, Sweden and Great Britain; DBRS in France and Sweden; JCR and R&I in France.

 Copyright © 2011. Academy of Knowledge Process

Table 7: Corporate governance control (independent members)

	NRSROs		ECAIs		Others with Code		Others without Code	
	No.	%	No.	%	No.	%	No.	%
Presence in administrative/supervisory organ	-	-	-	-	-	-	-	-
Remuneration policy	-	-	-	-	-	-	-	-
Term of office	-	-	-	-	-	-	-	-
Sufficient expertise in financial services	-	-	-	-	-	-	-	-

Table 7 emphasises an absolute absence of information about independent board members. This situation could signify a lack of interest towards this subject, probably due to the absence of a previous regulation and specific obligations for CRAs.

Table 8: Internal control system

	NRSROs		ECAIs		Others with Code		Others without Code	
	No.	%	No.	%	No.	%	No.	%
Prohibition of consulting services on financial instruments to be rated	7	70.0	3	60.0	10	90.9	-	-
Conflict of interests	10	100.0	5	100.0	9	81.8	-	-
Analysts rotation	5	50.0	2	40.0	3	27.3	-	-
Analysts' compensation independence from agency's revenues	10	100.0	5	100.0	9	81.8	-	-
Analyst independence from any other agency activities	10	100.0	5	100.0	11	100.0	1	16.7
Scrupulousness of methodologies and models	10	100.0	5	100.0	10	90.9	1	16.7
Adequacy of human and financial resources to rating activities	7	70.0	5	100.0	6	54.5	-	-
Reliability of information used for assessment	10	100.0	5	100.0	10	90.9	1	16.7
Records of methodologies and dialogues with rated entity	10	100.0	5	100.0	10	90.9	-	-
Confidential information treatment	10	100.0	5	100.0	9	81.8	-	-
Periodic review of methodologies and models	10	100.0	5	100.0	7	63.6	1	16.7
Review function	8 (°)	80.0	1	20.0	5 (°°)	45.5	-	-
Compliance function	10 (§)	100.0	5 (^)	100.0	8 (^^)	72.7	-	-

(°) When specified, the review function is assigned to senior managers of great experience (in 4 agencies) or to a credit policy committee composed of analysts (in 2 agencies). Out of 8 agencies with a compliance function, 1 also declares the independence of it, while 5 think it is useful only in particular hypotheses (depending on the rated financial instrument).
(§) The 80% of the NRSROs clearly specify the independence of the compliance officer too.
(^) The compliance function is defined independent in 4 cases.
(°°) No agency of this cluster with a specific review function states its independence.
(^^) The function is independent just in 4 cases.

Table 8 points out a greater transparency about internal control, in relation to the prevention of conflicts of interest, as well as the review of rating methodologies and models and the compliance control.The NRSROs express an high, or total, degree of compliance to the greatest part of the European Regulation's items. Anyway, internal control effectiveness shall be further strengthened by the prohibition of consultancy and advisory services to rated entities and by the imposition of analyst rotation. Moreover, while all the NRSROs have established a compliance function, the review function has not been activated by the entire cluster and, where it exists, it is not always clearly identifiable and independent.

 Copyright © 2011. Academy of Knowledge Process

The ECAIs are similar to the NRSROs as regards the limits to consultancy and advisory services and reinforcement of analysts independence through rotation mechanisms. Although all the ECAIs affirm that they periodically review their methodologies, models and rating hypotheses, a specific review function is not activated, while the compliance function is always present.

Compared to the NRSROs and the ECAIs, the non-recognised CRAs with a Code of conduct inspired by IOSCO Code are less compliant with the European Regulation requirements. Almost all these agencies state that they do not carry out consultancy activities and guarantee both the independence of their analysts and the quality of ratings (through scrupulous methodologies and use of reliable information). Nevertheless they should enhance the management of conflicts of interest, the review activity (through the establishment of a suitable function) and the compliance function.

Finally, the non-recognised CRAs without any code of conduct are far from the European Regulation and need an in-depth review of their whole internal control system.

Table 9: Disclosure

	NRSROs		ECAIs)		Others with Code		Others without Code	
	No.	%	No.	%	No.	%	No.	%
Transparency Report	-	-	-		-	-	-	-
List of ancillary services	8	80.0	2	40.0	3	27.3	-	-
Description of rating methodologies, models and hypotheses	10	100.0	5	100.0	10	90.0	3	50.0
Disclosure about changes in rating methodologies, models and hypotheses	10	100.0	4	80.0	7	63.6	-	-
Six-month data on historical default rates	-	-	-	-	- (*)	-	-	-
List of clients from which the agency obtains more than 5% of its total revenue	-	-	1	20.0	2 (**)	18.2	-	-
General nature of compensation arrangements	9	90.0	5	100.0	8	72.7	-	-
Disclosure about potential and actual conflicts of interest	10	100.0	4	80.0	7	63.6	-	-
Disclosure about internal control processes to prevent and manage conflicts of interest	10	100.0	5	100.0	9	81.8	-	-

(*) 45.5% of agencies inform about rating default rate with one year recurrence.
(**) 22.3% of agencies inform when a client originates more than 10% of whole agency's revenue.

Table 9 points out a high degree of compliance with the Regulation as regards the NRSROs, even when the results are zeroes, because they depend on a literal interpretation of the items. In actual fact, 70% of NRSROs publish historical default rates with a different time interval and commit themselves to signalling when at least 10% of revenue rises from one client. Table 10 shows the contents of the Transparency report, as required by the European Regulation.

 Copyright © 2011. Academy of Knowledge Process

Table 10: Transparency report: contents

	NRSROs		ECAIs		Others with Code		Others without Code	
	No.	%	No.	%	No.	%	No.	%
Legal structure and ownership	10	100.0	1	20.0	2	18.2	1	16.7
Internal control system	2	20.0	2	40.0	1	9.1	-	-
Statistics on allocation of the staff	-	-	1	20.0	-	-	-	-
Record-keeping policy	6	60.0	-	-	-	-	-	-
Outcome of the annual review of compliance function	1	10.0	-	-	-	-	-	-
Management and rating analyst rotation	3	30.0	-	-	-	-	-	-
Agency revenue	1	10.0	1	20.0	1	9.1	-	-
Governance statement	1	10.0	1	20.0	1	9.1	-	-

The Transparency report will also increase the NRSROs' disclosure, nowadays completely compliant with the European Regulation as regards only the information already demanded by NRSRO Form (legal structure and ownership). ECAIs' external communication is similar to NRSROs' one, except for the list of ancillary businesses. Moreover, the European Regulation sets a shorter time interval for the analysis of historical default rates, as we have already mentioned above: at the moment 60% of ECAIs give information with different recurrence. As concerns the communication about the main clients of the agency, please refer to Table 9. Furthermore, the ECAIs show a little degree of compliance with the request for mandatory disclosure of the Transparency report (Table 10).

Non-recognised agencies with a code of conduct disclose information about methodologies, models and rating hypotheses, independence of analysts' compensation from agency's revenue, and conflicts of interest and their prevention. Nevertheless the percentages are widely improvable–(Table 9). On the whole, the comparison with the information requested in the Transparency report underlines the need for significant compliance efforts in future (Table 10).

Non-recognised agencies without a code of conduct are almost always reticent and opaque in their external communication (Tables 9 and 10).To conclude we can affirm that NRSROs seem to be ready to respect the European requirements as regards control in corporate governance (which is not currently carried out, but compulsory for NRSRO recognition in the light of 2010 *Investor Protection and Securities Reform Act*), internal control (perfectible in some aspects but amply consonant at present) and external communication (making currently confidential information public).

The registration at CESR/ESMA will imply strong compliance efforts for existing ECAIs in relation to control in corporate governance. Although the ECAI regulation is less pressing than the American and the European Community ones, the agencies have a good level of compliance to Regulation (EC) No. 1060/2009 with regard to internal control and disclosure.The present affinity between NRSROs and ECAIs could be justified by the IOSCO self-regulation: indeed many of the IOSCO Code recommendations have been acquired by the European Regulation as mandatory rules.

The importance of self-regulation also appears in the comparison between non-recognised CRAs with a code a conduct (whose registration is not precluded) and those without the document and so lacking in internal control (whose registration would probably involve unsustainable compliance costs).

Therefore, we can deduce that the agencies currently recognised as NRSROs or ECAIs will be able to respect the European Regulation requirements without excessive compliance costs, unlike the others. Although the European Regulation aims at increasing competition in the European rating market, the biggest American agencies and the locally recognised ones will probably continue to dominate.Because of standardisation of minimal requirements in terms of governance

Copyright © 2011. Academy of Knowledge Process

and disclosure, we expect that the CRAs will look for different factors for establishing competitive advantage, for example the use of better rating methodologies or the improvement of stakeholder relationship management through a more transparent communication.

5. CONCLUSION

The analysis of reforms in rating sector points out a progressive harmonisation between the European and the American supervision models: this convergence probably accelerated because of the economic crisis, which has stressed the risks of a self-regulation system applied to CRAs. International harmonisation of rules is based on shared attention to external, internal and corporate governance controls and to the disclosure to the stakeholders, with the aim of strengthening agencies' credibility assuring their independence, effectiveness of governance and transparency in both behaviour and communication. Indeed, credibility is the most important key factor in competitive advantage; nonetheless, this principle should be reconsidered with reference to a rating market dominated by few big players, which are irreplaceable, in case of failure, by equally trustworthy competitors[8].

Regulation (EC) No. 1060/2009, imposing requirements aimed at guaranteeing minimal qualitative standards, wishes the maintenance of financial markets stability and, at the same time, the increase of competition in rating sector. This consideration led us in our empirical analysis concerning a cluster composed of the potentially most qualified CRAs for the Community registration, with the purpose of assessing their current compliance with the European requirements and express an opinion about the future competition trend in the European rating sector.

The analysis points out differences between agencies actually recognised as NRSRO/ECAI and all the others; in fact, the former have a good level of compliance with the European Regulation, while the latter have to fill the gap in their control systems. Moreover, the self-regulation appears to be carried out more effectively by the agencies already registered (in the United States and Europe), and it seems to be important for the promotion of their independence, but inadequate as regards the stakeholder protection.

These reflections induce us to foresee that the future competitive conditions in the European rating market will not be very different from the current ones, with a clear predominance of the existing NRSROs. Nevertheless we commit ourselves to validate this opinion in the near future, when the list of agencies recognised in compliance with the new European Regulation is made public. Furthermore, we could develop our research by examining the actual effectiveness of the Regulation through an in-depth study of the management of registered agencies and the rating market dynamics.

6. REFERENCES

Amtenbrink, F. & De Haan, J. (2009). Regulating credit ratings in the European Union: A critical first assessment of Regulation 1060/2009 on credit rating agencies. *Common Market Law Review*, *46*(6), 1915-1949.

Ashcraft, A. B. & Schuermann, T. (2008, March). *Understanding the securitization of subprime mortgage credit*. Federal Reserve Bank of New York Staff Reports, no. 318.

Bawden, T (2008, October 23). Credit rating agencies admit ranking many mortgage-related securities too high. *The Times*.

[8] For example, we remind you about some clamorous failures by Moody's, the biggest CRA in the world: on 20th November 2001 Moody's rated Enron B2 and on 2nd December 2001 Enron went bankrupt; on 15th September 2008, few hours before the bankruptcy, Lehman Brothers Holding was rated B3; on 15th September 2008 AIG was rated A2 and the day after it was rescued from bankruptcy by the US Government.

Copyright © 2011. Academy of Knowledge Process

Brancaccio, E. & Fontana, G. (2011). The Conventional Views of the Global Crisis: A Critical Assessment. In Arestis, P., Sobreira R., & Oreiro, J.L. (Eds.), *An assessment of the global impact of the financial crisis*. Basingstoke, UK: Palgrave Macmillan.

Buiter, W.H. (2007, December). *Lessons from the 2007 financial crisis*, CEPR Policy Insight No. 18. London, UK: Centre for Economic Policy Research.

Committee of European Securities Regulators (CESR) (2009, May). *Report by CESR on Compliance of EU based Credit Rating Agencies with the IOSCO Code of Conduct*.

Conti V. (2010, September), Speech of CONSOB Chairman to the Italian House of Representatives, 4th permanent commission (Finance). Rome, Italy. Available in Italian at <http://www.consob.it/main/documenti/Pubblicazioni/Audizioni/intervento_conti_20100923.htm.>

Coskun, D. (2008). Credit rating agencies in a post-Enron world: Congress revisits the NRSRO concept. *Journal of Banking Regulation*, *9*(4), 264-283.

Coval, J., Jurek, J., & Stafford, E. (2009). The Economics of Structured Finance. *Journal of Economic Perspectives*, *23*(1), 3-25.

Crouchy, M.G., Jarrow, R.A., & Turnbull, S.M. (2008). The subprime crisis of 2007. *Journal of Derivates*, *16*(1), 81-110.

Danielsson, J. (2008). Blame the models. In Felton, A. & Reinhart, C.M. (Eds.), *The first global financial crisis of the 21st century* (pp. 13-15). Centre for Economic Policy Research, VoxEU.org Publication.

Diamond, D.W. & Rajan, R.G. (2009). The credit crisis: Conjectures about causes and remedies. *American Economic Review*, *99*(2), 606-610.

European Commission (2006). Communication from the Commission on Credit Rating Agencies (2006/C 59/02).

Felton, A. & Reinhart, C.M. (Eds.) (2008). *The first global financial crisis of the 21st century*, Centre for Economic Policy Research, VoxEU.org Publication.

Felton, A. & Reinhart, C.M. (Eds.) (2009). *The first global financial crisis of the 21st century. Part II June-December 2008*. Centre for Economic Policy Research, VoxEU.org Publication.

Fender, I. & Mitchell, J. (2005, June). Structured finance: complexity, risk and the use of ratings. *BIS Quarterly Review*, 67-79.

Financial Services Authority (FSA) (2009, March), *The Turner Review: A Regulatory Response to the Global Banking Crisis*.

Financial Stability Forum (2008, April). *Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience*.

Friedland, J. (2009). The subprime and financial crises. *International Journal of Disclosure and Governance*, *6*(1), 40-57.

Hull, J.C. (2009). The credit crunch of 2007: What went wrong? Why? What lessons can be learned? *The Journal of Credit Risk*, *5*(2), 3-18.

International Organization of Securities Commissions (IOSCO) (2003, September). *IOSCO Statement of Principles regarding the Activities of Credit Rating Agencies*.

International Organization of Securities Commissions (IOSCO) (2004, December, revised in 2008, May). *Code of Conduct Fundamentals for Credit Rating Agencies*.

International Organization of Securities Commissions (IOSCO) (2009, March). *A Review of Implementation of the IOSCO Code of Conduct Fundamentals for Credit Rating Agencies*.

Justensen, P.J. (2009). Ratings recall: Will new reform proposals make lasting impact? *The Journal of Corporation Law*, *35*(1), 193-213.

Katz, J., Salinas, E., & Stephanou, C. (2009, October). Credit rating agencies. No easy regulatory solutions. *Crisis Response. Note Number 8*, 1-8.

Kolb, R.W. (Ed.) (2010). *Lessons from the financial crisis*. Hoboken, NJ: John Wiley & Sons.

Copyright © 2011. Academy of Knowledge Process

Lim, M.M.-H. (2008). *Old wine in a new bottle: Subprime mortgage crisis – Causes and consequences*, The Levy Economics Institute Working Paper No. 532.

Listokin, Y. & Taibleson, B. (2010). If you misrate, then you lose: Improving credit rating accuracy through incentive compensation. *Yale Journal on Regulation*, *27*(1), 91-113.

Mariano B. (2009). Do reputational concerns lead to reliable ratings?. In Felton, A. & Reinhart, C.M. (Eds.), *The first global financial crisis of the 21st century. Part II June-December 2008* (pp. 135-136). Centre for Economic Policy Research, VoxEU.org Publication.

Masera, R. (2009). *The great financial crisis*. Roma: Bancaria Editrice.

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.

Matthews, D.J. (2009). Ruined in a conventional way: responses to credit ratings' role in credit crises. *Northwestern Journal of International Law & Business*, *29*(1), 245-274.

Portes R. (2008). Ratings agency reform. In Felton A. & Reinhart C.M., ed. (2008), *The first global financial crisis of the 21st century* (pp. 145-149). Centre for Economic Policy Research, VoxEU.org Publication.

Richardson, M. & White, L.J. (2009). The rating agencies. Is regulation the answer? In Acharya, V.V. & Richardson, M. (Eds.), *Restoring financial stability. How to repair a failed system* (pp. 101-116). Hoboken, NJ: John Wiley & Sons.

Spreta, V. & Veldkamp, L. (2009). Ratings shopping and asset complexity: A theory of ratings inflation. *Journal of Monetary Economics*, *56*(5), 678-695.

Stone, T. (2008, March 2). Rating agencies must put their house in order to restore trust. *The Sunday Times*.

U.S. Securities and Exchange Commission (SEC) (2009, September). *Annual Report on Nationally Recognized Statistical Rating Organizations*.

Yay S. (2010, July 28). *The financial crisis of 2007: Roles of CDOs, CDSs and subprime mortgages*, HPEC.491 Honors Project in Economics. Retrieved April 3, 2011, from <http://www.scribd.com/doc/42728437/The-Financial-Crisis-of-2007-Roles-of-CDOs-CDSs-and-Subprime-Mortgages>.

 Copyright © 2011. Academy of Knowledge Process