

Rating triggers and overall market risk: do we need more regulation?

Federico Parmeggiani

Hauser Global Law School - New York University

Università degli Studi di Modena e Reggio Emilia

Abstract:

A rating trigger is a peculiar type of covenant - incorporated in bond indentures or in financial contracts - that forces the borrower to maintain its own credit rating above a certain rating threshold, requiring in the event of a downgrade the adoption of specific enforceable actions aimed at securing the lender claims from the borrower's higher risk level. Rating triggers lower the cost of borrowing capital, but in case they are activated they exacerbate the borrower's need for liquidity just in the moment when its credit risk is higher, making the borrower's default more likely to occur. Despite the potential threat posed by rating triggers on debt market, these contractual devices remain almost unregulated both in the U.S. and in Europe. The purpose of this research is to assess the proliferation of rating triggers in the bond market and to analyze the effects they have on overall market risk in order to ensure whether these contractual devices need a stricter regulation. The research is based on three steps. First, I will assess the incidence of rating triggers in bond indentures drafted by a significant sample of American and European issuers during the last decade (2001 – 2011) in order to evaluate the incidence and the variety of rating triggers under bull and bear market conditions. Second, I will assess the correlation between the issuers' use of rating triggers and their credit rating performances, in order to understand whether triggers are used under weaker creditworthiness conditions, when their activation is more likely to occur. Third, I will evaluate the possible regulatory solutions that can be adopted to restrain the risk posed by rating triggers, in order to understand whether regulators should opt for a softer approach based on mandatory disclosure requirements or for a more pervasive one, allowing triggers' activation to be blocked or delayed under certain market conditions.

Keywords: Rating Trigger, Credit Rating, Credit Risk, Financial Regulation

JEL Classification: G24, G28, K22

1. The nature and the function of rating triggers

A rating trigger is a peculiar type of covenant included in bond indentures or in other forms of financial and loan contracts in order to keep the borrower risk level under control by pushing the borrowing party to maintain its own credit rating above a certain rating threshold. Once a rating trigger has been included in the contract provisions, if the borrower's rating gets downgraded below the given threshold the lender has the enforceable right to impose the borrower a specific action, aimed at securing the lender's claim from the borrower's higher risk level. As for other types of covenants, the borrower's duties activated by the rating downgrade may vary consistently, according to the contracting parties' autonomy . The nature and the function of rating triggers are topics that have been relatively neglected by economists and legal scholars, who have instead appeared more willing to address other general issues concerning the function performed by credit rating agencies in financial markets¹. Nevertheless, due to the key role that rating triggers had played in some famous bankruptcy cases during the early 2000s², some studies have been developed by professionals

¹ I see the seminal works of Frank Partnoy on the intrinsic regulatory problem of credit rating agencies - called "regulatory license" problem - concerning the inclusion of explicit references to credit ratings in financial regulation (see Frank Partnoy, *The Siskel and Ebert of Financial Markets: Two Thumbs Down for the Credit Rating Agencies*, in 77 Wash. U. L.Q., 619 (1999); Frank Partnoy, *The Paradox of Credit Ratings*, University of San Diego Law & Economics Research Paper No. 20., 2001, available at SSRN: <http://ssrn.com/abstract=285162>; Frank Partnoy, *How and Why Credit Rating Agencies are Not Like Other Gatekeepers*, in Y. Fuchita - R.E. Litan, *Financial Gatekeepers: Can They Protect Investors?*, Washington, DC, 2006). On the role regulator played in shaping the competition problem in the rating market and more in general on the contribution of poorly designed regulation to rating agencies problem, see Lawrence J. White, *The Credit Rating Industry: An Industrial Organization Analysis*, NYU Center for Law and Business Research Paper No 01-001, February 2001; Lawrence J. White, *Good Intentions Gone Awry: A Policy Analysis of the SEC's Regulation for the Bond Rating Industry*, NYU Working Paper n. EC-05-16, 2005, available at <http://ssrn.com/abstract=1282540>; Lawrence J. White, *The Credit Rating Agencies: Understanding Their Central Role in the Subprime Debacle of 2007-2008*, Working Paper EC-09-06, Stern School of Business, N.Y.U., 8 april 2009. For a sound analysis on the state of art on credit rating sector and for some proposed policy solutions see John C. Coffee jr., *The Role and Impact of Credit Rating Agencies on the Subprime Credit Market*, Testimony before the Senate Banking Committee, September 26th 2007; John C. Coffee jr., *Turmoil in the U.S. markets: the role of the credit rating agencies*, Testimony before the United States Senate Committee on Banking, Housing and Urban Affairs, April 22nd 2008; John C. Coffee jr., *Ratings Reform: The Good, The Bad, and The Ugly*, Columbia Law and Economics Working Paper No. 375, 2010; ECGI - Law Working Paper No. 162/2010. Available at <http://ssrn.com/abstract=1650802>. For a seminal contribution to the debate on the rating agencies liability see Gregory Husisian, "What Standard of Care Should Govern the World's Shortest Editorials?: An Analysis of Bond Rating Agency Liability," 75 *Cornell Law Review* 411 (1991)

² see STUMPP, P. et al., *The Unintended Consequences of Rating Triggers*, Moody's Special Comment, December 2001, where several cases highlighting the relationship between the use of rating triggers and the borrower's default are presented. The most famous one is undoubtedly the Enron case. Other prominent cases involved On Enron case, a specific report was issued in 2003 by the Committee on Governmental Affairs of the United States Senate, entitled "Enron's credit rating: Enron's bankers' contacts with Moody's and Government Officials", where at page 2 is it stressed that "[Enron] investment grade rating was essential to its ability to enter

of the rating sector in order to obtain a deeper knowledge of these controversial contract clauses.

Although the shaping of rating triggers clauses depends ultimately on the agreement between the lender and the borrower, it is possible, anyway, to identify some basic types of rating triggers, which differ among each other by the consequences their activation has on the borrower³.

A first type of rating triggers consist in *rating based collateral and bonding provisions*. These clauses are usually included into bank loan agreements and once they are activated they require the borrower either to post more collateral, or to provide a specific letter of credit or to secure in other ways the claim of the lenders placed at stake by the downgrade.

A second type of rating trigger clauses, called *rating step-up triggers* or *rating based pricing grids*, provides that in the event of the designated downgrade, the borrower will have to increase the lender return as a remedy for the higher risk the latter has to bear. When incorporated in bond indentures these clauses usually require the issuer to increase the interest paid to bondholders as its rating falls below the rating thresholds set in the contract. Some step-up triggers may just be shaped as a simple precautionary measure and then refer to one single threshold usually corresponding to the rating notch that separates the investment grade section of the rating scale from the speculative one (BBB- according to Standard and Poor's and Fitch rating scale, Baa3 according to Moody's scale). In addition, some lenders may well decide to shape the step-up trigger setting several thresholds, in order to establish a more sensitive and immediately responsive correlation between the borrower's risk reflected in its rating and the interest it has to provide.

A third type of triggers consists in the *acceleration triggers*. These triggers, considered to have the most severe impact on the borrower, require that in the event of the designated downgrade the borrower had the duty to accelerate the payment of the loaned capital to the lender or the payment of the bond's principal to the bondholders⁴.

A fourth type of rating trigger, the *rating based put provision*, even requires the borrower whose rating has been downgraded below the designated threshold to buy back the issued debt from

into agreements with counterparties in the context of its trading operation, one of Enron's most profitable divisions; in addition, Enron had "triggers" tied to credit ratings in a number of agreements that, in the event of a downgrade, would have either constituted a default or would have required Enron to post significant amounts of cash collateral".

³ This list has been drawn according to the very precise classifications of the different types of rating triggers provided in STUMPP, P. et al., *The Unintended Consequences of Rating Triggers*, Moody's Special Comment, December 2001, which is one of the most detailed Moody's report on the topic.

⁴ See STUMPP, P. et al, (note 2).

the lenders.

An even more extreme fifth type of rating trigger, that could be named *rating based default trigger*, allows the lender - in the event of the designated downgrade – to treat the borrower's downgrade as a default on the obligation protected by the triggers, allowing the lender to consider the increase in its counterparty risk as the failure of the latter to fulfill the obligation set in the contract.

The borrower's peculiar duty to maintain its rating above a certain threshold can also be combined with other kinds of borrower pledges, in order to tailor loan and bond covenants whose activation require both a rating downgrade and the occurrence of an additional risk event. An important example of such mixed triggers is represented by certain forms of the famous "*super poison put provision*" which has been employed by shareholders as a valuable defensive measure during several takeovers and leverage buyouts occurred during the last few decades⁵.

A further example of incorporation of rating references into a covenant can be found in some prominent corporate merger cases occurred in the last decade, whose merger agreements included a "*material adverse change*" clause based on the merging companies' rating performance. According to such clauses, if the rating of one of the two merging parties gets downgraded within a certain timespan, the other party has the right to terminate the merger itself, since the counterparty has become less attractive due to its increased risk⁶.

5 As reported in GONZALEZ, F. - HAAS, F. - JOHANNES, R. - PERSSON, M. - TOLEDO, L. - VIOLI, R. - WIELAND, M. - ZINS, C., *Market dynamics associated with credit ratings*, European Central Bank occasional paper no. 16/ June 2004, such a super poison put provision was used in the late 1980's in the famous leverage buyout of RJR Nabisco, as the authors noted at p. 14 : "[a] super poison put provision allows bondholders to sell their bonds to the issuing company at par value or at a premium after the occurrence of a "designated event" combined with a "qualifying downgrade". Hence, super poison put provisions can be viewed as conditional rating triggers, conditional on a specific event or a set of events. The exact provisions varied from issue to issue, creating uncertainty about the strength of the protection offered in any particular bond issue. In response to this uncertainty, S&P began rating the event risk protection of bonds with put provisions in July 1989".

6 An example of this material adverse change clause based on rating can be found once again in Enron troubled history. At the end of 2001, some months before collapsing, Enron attempted to establish a merger deal with Dynegy, another Texas based company operating in the energy sector. Such merger agreement included a "material adverse change" clause allowing Dynegy to exit the agreement in case Enron credit rating would have been downgraded. The report issued in 2003 by the Committee on Governmental Affairs of the United States Senate, entitled "*Enron's credit rating: Enron's bankers' contacts with Moody's and Government Officials*", noted at page 3 that: "Moody's officials were concerned, however, that the merger agreement presented to them contained too many "outs" for Dynegy, principally in the form of conditions linked to "material adverse changes" ("MACs"). These MAC clauses would have allowed Dynegy to terminate the transaction based upon, among other things, a decline in Enron's credit rating".

2. Rating triggers: the rating agencies' views and the regulator's concerns

In the early 2000s the first market actors who put emphasis on the diffusion and the potential effects of rating triggers were the credit rating agencies themselves.

In 2001 Moody's released an important study on the topic - entitled "*The Unintended Consequences of Rating Triggers*" - that not only provided one of the first and most accurate attempt to classify the triggers used in financial transactions, but also warned about the consequences that certain triggers could have on the overall market risk⁷. In that report the agency assessed the diffusion of rating triggers clauses in bond indentures and in loan contracts and observed how their use had been increased over the last years, posing new unpredictable challenges for financial markets. In fact Moody's, after providing a careful examination of some prominent bankruptcy cases, stressed how some types of rating triggers (in particular the acceleration triggers and the termination triggers) were potentially able to exacerbate a borrowing company's liquidity problems, remarkably increasing the borrower's default risk and pushing a downgraded company faster towards the verge of bankruptcy⁸. In particular, Moody's researchers observed that "[r]ating triggers can result in a precipitous decline in confidence and liquidity. [...] The loss of liquidity when a downgrade occurs may be stressful for the borrower, precisely at the time when the company is least able to deal with an associated loss of investor confidence. Such triggers can be highly destabilizing because all parties may not behave in a rational fashion", and then they remarked that "[r]ating triggers are most often used in agreements for low investment grade and crossover credits - where they are most lethal". According to this findings the agency drafted some policy guidelines, stressing that "Moody's will identify, where possible, the existence of rating triggers in each issuer's financial structure" and then "will incorporate the serious negative consequences of those triggers in [its] ratings and in [its] research".

The same agency in 2002 issued another report, entitled "*Moody's Analysis of US Corporate Rating Triggers Heightens Need For Increased Disclosure*"⁹, expressing concerns about the effects that the increasing risk related to the widespread use of rating triggers in loan contracts and bond indentures could have on the overall market stability. The report showed the results of a survey on rating triggers performed by the agency, according to which "[n]early 87.5% of

7 Pamela M. Stumpp at al., (note 2).

8 Pamela M. Stumpp at al., id.

9 Pamela M. Stumpp - Monica M. Coppola, *Moody's Analysis of US Corporate Rating Triggers Heightens Need for Increased Disclosure*, Moody's Special Comment, July 2002.

responding companies whose debt is rated Ba1 or higher reported that they had rating triggers. According to information supplied by these companies, only 22.5% of the triggers were disclosed in their SEC filings. Some of the most problematic triggers may not be disclosed as more than half of the disclosed triggers related to pricing grids". As remarked by the rating agency, the uncontrolled use of triggers, instead of limiting the risk for creditors and bondholders, could, on the contrary, pose a serious threat on their claims' satisfaction: "*investors who think that they might be protected by a rating trigger contained in their respective agreement may well find – as in recent cases – that there is no protection because the trigger could potentially cause a default or bankruptcy adversely affecting all creditors*". In the same comment, the agency explained also how to factor rating triggers in its creditworthiness evaluations, stressing that, although "*some of the more risky triggers can exacerbate a rating downgrade made for fundamental reasons*", nonetheless "*Moody's will not forebear from taking a rating action because of the potential adverse consequences resulting from the existence of a ratings trigger*". Therefore, Moody's concluded stressing that the existence of rating triggers in an issuer's financial structure would have been highlighted in the agency's evaluations and that, in addition, "[a]n issuer's refusal to provide information about its rating triggers to Moody's [would have been] considered a negative factor in the ratings process"¹⁰.

In the very same years, Standard & Poor's - Moody's main competitor - performed a study on the same topic, showing mixed results and less concerned comments, compared to Moody's ones. In fact, in 2002 Standard and Poor's issued a report - entitled "*Identifying Rating Triggers and Other Contingent Calls on Liquidity*" - which was aimed at assessing corporate exposure to contingent calls on liquidity, "*particularly rating triggers, that could cause a liquidity crisis*"¹¹. The assessment, based on the analysis of a large amount of US and European companies, showed that "*very few companies were viewed as having a high degree of risk*". Nonetheless, the agency concluded that "*the perceived difference in risk supports the need for greater disclosure, additional consideration for incorporation in ratings, and greater advocacy for addressing this risk*"¹². In May 2002, Standard and Poor's issued a complete version of the study, stating that, of roughly the 1,000 U.S. and European companies assessed, only 23 companies resulted severely affected by rating triggers, in a way that, once activated, they could have a serious impact on the issuers' liquidity. However, S&P also stressed that none of the above mentioned companies was actually facing an imminent threat of a liquidity problem, since none of them was likely to be downgraded or put on Creditwatch list.

10 Pamela M. Stumpp et al, (note 9), p. 3.

11 Standard & Poor's, *Identifying Rating Triggers and Other Contingent Calls on Liquidity*, March 2002.

12 Standard & Poor's, id.

After this reassuring survey by S&P, also Moody's issued a more optimistic report concerning U.S. life insurance sector - entitled "*Rating Triggers continue to constitute a Relatively Minor Threat for Most U.S. Life Insurers*" - stating that "[n]one of Moody's rated life insurance groups possess any rating triggers in their contracts that carry the potential for significant adverse financial consequences"¹³. However, in the same report, Moody's stressed that the use of rating triggers had grown since the agency's earlier reports, both in U.S. life insurance sector and in transactions associated with derivative contracts.

Moreover, for most of the years 2000s, rating triggers were not just a matter of concern for credit rating agencies, since in the same period both US and European financial regulators had performed some policy analyses addressing also rating-based contractual clauses.

In 2004, the Committee on Economic and Monetary Affairs of the European Parliament issued a report on the "*Role and Methods of Rating Agencies*"¹⁴, aimed at providing an assessment of the credit rating sector, in order to ensure whether European Union should implement a specific regulation on credit rating agencies, which was lacking at that time¹⁵. In that report, the European Parliament acknowledged the main issues associated with the use of ratings in private contracts and further emphasized the need of a specific regulatory intervention, stressing that the Parliament: "[c]onsiders it an obligation of ratings users, whether in the private or in the public domain, to use ratings with proper regard for the stability of financial markets, especially by disclosing any rating triggers included in loan agreements or face the sanction of such clauses being declared null and void".

The Committee further explained such statement, remarking that "[t]he implications, for the stability of the markets, of the use made of ratings both by private agents, in the form of rating triggers, as well as by regulatory authorities, in the form of regulatory capital weights and/or bond eligibility conditions are serious and merit a deeper, separate analysis. Regulatory recommendations in this area do not seem to have matured to the point of making detailed rules possible, however our Rapporteur raises the prospect of introducing certain rules in the interests of market stability".

A similar awareness of the problems related to the uncontrolled use of rating triggers by market actors can be found, one year later, in the report issued in 2005 by the Committee of European Securities Regulators (hereinafter CESR), required by the European Commission in order to provide technical advices on possible regulatory measures concerning credit rating

13 Moody's, *Rating Triggers continue to constitute a Relatively Minor Threat for Most U.S. Life Insurers*, June 2003.

14 Committee on Economic and Monetary Affairs of the European Parliament, *On Role and Methods of Rating Agencies*, 2004.

15 A specific regulation of the credit rating sector has been subsequently introduced in the European Union by Regulation n. 1060/2009 and by the amending regulation n. 513/2011.

agencies¹⁶. In that report, the CESR provided its own opinion on rating triggers and their effects, observing that: “[n]ot all rating triggers are alike. Some are relatively harmless, such as those that incrementally increase the interest paid on loans and bonds in line with rating downgrades. However, some might have significant potential negative impact on the issuer. In this case, contractual rating triggers can seriously escalate liquidity problems at firms faced with a deteriorating financial outlook. For instance, when investors are entitled to sell their bonds back to an issuer immediately following a downgrade, which results in a funding crisis just when a firm is least able to deal with it”¹⁷.

With regard to possible regulatory interventions the CESR on one side stressed the need of a stringent disclosure regime: “[d]isclosure of rating triggers by issuers has until recently been incomplete and largely ignored by analysts and investors. Transparency and disclosure are important features that could help mitigate some of the negative aspects of rating triggers.¹⁸”. On the other hand, the CESR noticed that, under the European Regulation on Prospectuses n. 809/2004, an issuer already had the duty to promptly disclose every material covenant that could affect or restrict the use of credit facilities and to provide information on how to react to such covenants’ activation. Hence the CESR concluded that, since rating triggers could be included in such category of covenants, “there is no need of specific requirements in the context of the operation of credit rating agencies regarding the use of ratings in private contracts, since the current EU framework provides the necessary tools to ensure that the market is properly informed of the possible effects that rating triggers might have in the market”¹⁹.

In the same period, on the opposite side of the Atlantic ocean, the issues associated with the use of rating triggers were also being assessed by the U.S. Securities and Exchange Commission (hereinafter SEC). In January 2003 the SEC, as required by the section 702(b) of the Sarbanes-Oxley Act, issued a document - entitled “*Report on the Role and Function of Credit Rating Agencies in the Operation of the Securities Markets*”²⁰ - in which it expressed its concerns for the role played by rating triggers in some of the most famous bankruptcy cases occurred at that time, observing that: “the widespread use of “ratings triggers” in financial contracts recently has received considerable attention as a result of certain high-profile bankruptcies, such as *Enron and Pacific Gas and Electric Company (“PG&E”)*. In the case of *Enron*, the use of credit ratings as “triggers” in trading and other financial agreements gave counterparties the right to demand cash collateral, and lenders the right to demand repayment of outstanding loans, once *Enron’s* credit rating declined to certain levels. As a result, the existence of ratings triggers contributed to *Enron’s* financial difficulties. Similarly, the impact of credit rating

16 Committee of European Securities Regulators, CESR’s technical advice to the European Commission on possible measures concerning credit rating agencies, March 2005

17 Committee of European Securities Regulators, id., 38.

18 Committee of European Securities Regulators, id., 38.

19 Committee of European Securities Regulators, id., 39.

20 Securities and Exchange Commission, *Report on the Role and Function of Credit Rating Agencies in the Operation of the Securities Market*, January 2003

downgrades on PG&E's financial agreements limited its ability to borrow funds to repay its short term debt obligations. In cases such as these, contractual ratings triggers can seriously escalate liquidity problems at firms faced with a deteriorating financial outlook"²¹.

Furthermore, in the same report the SEC also mentioned the possible introduction of stricter disclosure requirements, aimed at preventing the rating triggers' negative effects: *"because of the significant potential negative impact of contractual ratings triggers on issuers, the Commission intends to explore whether issuers should be required to provide more extensive public disclosure regarding such triggers"*²².

In the subsequent years, the debate seemed to shift from rating triggers to the problems affecting rating agencies' business in general. In fact, the *Credit Rating Agencies Reform Act* adopted in 2006 in the U.S. and the E.U. *Regulation n. 1060/2009* on credit rating agencies did not specifically address any issue concerning rating triggers. Such regulatory choices can be explained considering the prominent importance attributed at that time in the regulatory agenda to issues like credit rating agencies conflicts of interest, competition in the credit rating market and more generally the lack of regulatory supervision on the agencies.

However, in the recent years, the problems associated with rating triggers seemed to raise concerns again, both among the agencies and the regulators.

In fact, in 2008 Standard & Poor's issued a report - entitled *"Evaluating Liquidity Triggers in Insurance Enterprises"* - which reaffirmed the concerns regarding the effects of rating triggers on overall market risk. According to S&P, *"triggers elevate default risk, and therefore it is appropriate that ratings address this added risk. While two companies may be virtually identical in terms of operations and balance sheet, if one has material contingent liquidity calls and very tight triggers, we usually will consider it to have a higher credit risk"*. Hence the agency remarked that, since *"it is risky for an insurer to effectively tie its fate to maintaining a certain credit rating"*, then *"we believe there is a considerably higher risk when an insurer agrees to credit puts that require it to retire large chunks of its financing or to post new collateral against trading positions in the event of a downgrade. In this scenario, a downgrade could precipitate serious liquidity problems, or even cause insolvency. In such a case, a proposed rating action may be larger, or quickly followed by additional rating changes as a result of these events"*. For these reasons S&P concluded stating that an irrational use of such provisions would have been factored into its evaluations as an unduly and aggressive management strategy, able to negatively impact on the issuer's rating²³.

Similarly, in 2009 Moody's issued a report on the use of rating triggers in life insurance sector, entitled *"Uptrend in rating trigger usage and the impact for US life (re) insurers"*, in which the agency highlighted the increasing use of triggers during the year 2008, reversing the declining trend

21 Securities and Exchange Commission, id., 29.

22 Securities and Exchange Commission, id., 29.

23 Standard & Poor's, *Evaluating Liquidity Triggers in Insurance Enterprises*, November 2008, 2.

of the years 2006-2007. Moody's then explained its concerns stressing that “*during periods of economic weakness, [...] with rising corporate defaults, rating trigger usage and severity tend to climb as the life (re)insurance industry's business partners and counterparties seek additional protection from the potential credit deterioration of their (re)insurance partner*” and concluded that “[a]s triggers proliferate and become harsher -- i.e., closer to current ratings and with more material consequences -- the more they expose the life (re)insurance industry to financial risk, just at a time that companies are already under great stress”.

Furthermore, in the last few years the regulators also seemed to pay more attention to rating triggers and to the use of rating in financial contracts.

In Europe, at the end of 2010 the European Commission issued a *Public Consultation on Credit Rating Agencies*, aimed at assessing all the issues associated with the credit rating sector that deserved to be addressed by European regulators. Among the various recommendations provided, the Commission stressed the need to require investment managers to regularly review the use of external ratings in their investment guidelines in order to raise the awareness of the risk of having external rating triggers in investment contracts. Hence the Commission remarks that “[t]he aim would be to reduce the use of automatic rating triggers and to introduce some flexibility which would allow investment managers to deviate from external rating thresholds under specific conditions”²⁴.

In the U.S. the SEC in its last report on Nationally Recognized Statistical Rating Organizations – as required by section 6 of Credit Rating Agency Reform Act of 2006 – examine again the problem posed by the use of rating triggers, observing also how “[w]hen ratings triggers are present, a decline in the rating of an issuer or obligor below a certain level can alter the obligations of parties to an agreement, for example, providing a counterparty to a derivatives contract with the right to demand collateral or lenders the right to demand repayment of a loan. The ratings of specific rating agencies are often specified in such agreements. The extensive use of credit ratings in private contracts has enhanced the importance of credit ratings to the marketplace”.

In conclusion, both the credit rating agencies and the regulators, during the last decades have frequently assessed the problems associated with the use of rating triggers and the dynamics they entail. The concerns shown by the above mentioned institutions seem to vary from time to time from alarmed to more reassuring, probably depending on the overall market conditions, since the macroeconomic scenario seems to influence the use of rating triggers itself.

However, due to the mixed and sometimes slightly contradicting opinions provided in different times on the seriousness of the rating triggers' effects, such area needs to be further

24 European Commission, *Public Consultation on Credit Rating Agencies*, November 5th, 2010, 13.

investigated in order to assess whether such rating based contractual clauses are still playing an important role in the debt market and to which extent they can still be considered a disruptive factor in terms of market's overall risk.

3. The advantages of rating triggers

3.1 Rating triggers as a lender's protection against asset substitution problems

In order to shed some light on the rationale behind the use of rating triggers in financial contracts, we have first to highlight the link between these types of contractual provisions and the asset substitution problem.

Asset substitution is a famous problem affecting the contractual relationships between shareholders and debt holders within a company. To sum up, as acknowledged for the first time several decades ago²⁵, the coexistence in a corporation of both shareholders' and debt holders' claims may lead to a conflict between these two categories of claimants. In fact, shareholders' potential remuneration is variable, depending on the company's profits, and it is positively correlated with the risk that the company bear, whereas the debt holders remuneration is fixed - i.e. the principal plus the interest - regardless of the risk profile of the projects engaged by the company.

Hence, since the company decisions are taken by the shareholders, they may decide to shift the company activities towards a higher risk level, exchanging low risk assets for high risk investments. By doing so, the shareholders would increase the overall company's risk, but also the company's expected profits and then their own expected remuneration. On the contrary, under the company's higher risk profile, the debt holders' fixed compensation would remain the same, but their claim would be less secured due to the higher default probability faced by the company by engaging in risky projects. Therefore, this problem is known by the name of "asset substitution", because the shareholders substitute safe assets with risky investments at the expense of the debt holders, or by the name of "risk-shifting", because the shareholders, in order to maximize their profits, try to shift the risk to bondholders.

²⁵ Michael C. Jensen - William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*. Journal of Financial Economics 3 (4), 305 (1976)

One of the best ways bondholders can address asset substitution problems lies in the use of bond covenants, which are contractual devices that are included in loan contracts and bond indentures in order to redistribute risk between shareholders and debt holders in order to prevent asset substitution. In fact, a bond covenant is a clause that forces the borrower (i.e. the shareholders) to take (affirmative covenant) or to avoid (negative covenant) a particular action in order to protect the lender's (bondholders') claims and to keep the company's risk under control. According to one of the most famous analyses provided on the topic²⁶, the covenants can encompass various and diversified pledges.

Some covenants may restrict the company's production strategies and investment policies, preventing the firm from engaging in certain business projects or from investing in certain securities; other covenants may restrict the company's dispositions of assets, prohibiting the transfer of those regarded as strategic; others may force the company to secure bondholders' debt, entitling bondholders to certain pledged assets until the bonds are paid in full; other covenants may restrict mergers, prohibiting them at all or permitting them only after specific conditions are met (e.g. the bondholders' approval). Some other covenants limit the payment of dividends to shareholders, in order to restrict the classic strategy by which shareholders can impoverish the firm's assets; other covenants may instead pose limitations on the issue of new tranches of debt, that would be able to increase the number of claimants and further dilute the firm's assets; others may instead limit the ability of the firm to draw rental or leasing contracts that may result in a similar dilution effect. Finally, some covenants may simply establish a duty to inform bondholders, e.g. by providing them with certain reports, financial statements or certifications. As a result, bond covenants can be extremely diverse and it is possible for bondholders to combine and customize them in order to carve the contractual provisions that best suit the company's specific profile.

Despite the potential of such a great variety of clauses, bond covenants however show a remarkable weakness that is able to hinder their effectiveness. In fact, the company's lack of compliance with the pledges they are based on can be sometimes hard to detect for a dispersed and non-coordinated group of claimants like the bondholders. In order to make the covenant pledge enforceable, bondholders may in fact need to constantly monitor the company's compliance, which sometimes it means to bear remarkable costs that make the covenant adoption less effective and thus less attractive²⁷.

26 see Clifford W. Smith jr. - Jerold B. Warner, *On Financial Contracting - An Analysis of Bond Covenants*, 7 *Journal of Financial Economics*, 117 (1979).

27 see Clifford W. Smith jr. - Jerold B. Warner, *id.*, 153 as they stress that in particular it would be very costly for the bondholders to monitor the compliance with a covenant prescribing the company to adopt certain specific

This costly monitoring problem, on the contrary, does not affect rating triggers at all. In fact, a rating trigger forces the company to comply with a clear and straightforward requirement, i.e. to keep its rating above a certain threshold. In addition, the compliance with such pledge is extremely easy to monitor for bondholders by browsing financial press or the rating agency website, requiring them a cost which is basically equal to zero.

For this reasons, rating triggers are probably the less costly and then the most effective form of bond covenant bondholders may want have in a bond indenture. In fact, under such an easy and inexpensive regime of verification, there's virtually no risk that any sophisticated shareholder might try to conceal the breach of the covenant, engaging in asset substitution practices despite the binding pledge subscribed.

Hence, once bondholders agree on the reliability and on the significance of credit ratings in terms of risk evaluation, they would strongly favor debt issues that are secured by rating triggers, instead of those that are protected by other covenants that appear more difficult to understand and more costly to monitor and enforce.

3.2 Rating triggers as a way to lower the borrower's cost of raising debt capital

The above explained strong favor bondholders are likely to show for rating triggers is also able to highlight the reason why issuers/borrowers are willing to incorporate rating triggers in their bond indentures and in their loan contracts. A simple explanation can be found considering the use of rating triggers as a solution for the classic market information problem called *adverse selection*²⁸.

In fact, most of the potential bondholders are usually relatively unsophisticated actors and thus they are unable to assess the actual risk profile of all the companies in the market. Therefore, bondholders are neither able to assign an appropriate price to the bonds issued by a company and accordingly require the right interest amount. Bondholders are instead more

production/investment strategies: “[t]he high monitoring costs which would be associated with restrictive production/investment covenants, including the potential legal costs associated with bondholders control, dictate that few production/investment decision will be contractually prescribed”. See also LELAND, H., *Corporate debt value, bond covenants, and optimal capital structure*, *Journal of Finance*, 49, p. 1213, (1994)

²⁸ see the first seminal contribution that analyzed the problems of adverse selection, unveiling new frontiers of the economy of information, George A. Akerlof, *The Market for 'Lemons': Quality Uncertainty and the Market Mechanism*, 3 *Quarterly Journal of Economics* 84 (3), 488 (1970).

likely to show a defensive attitude and then treat bonds issued by companies with different risk profiles at the same manner, requiring from each one of the companies the interest rate corresponding to the more risky ones among them, and thus harming the less risky companies whose bonds are in fact worth a lower interest.

Furthermore, if most of the covenant pledges binding the issuers are equally difficult to monitor and to enforce, the impossibility to discriminate between high-risk and low-risk bonds is not affected by the inclusion of covenants in bond indentures. In fact, potential bondholders - unsophisticated ones in particular - would keep playing defensive and continue to consider all the bonds at the same manner, regardless of the actual cost of the covenant activation since such estimation may be costly as well.

In this scenario, every company which is confident in its ability to repay its debt may decide to provide the bondholders with a signal, aimed at persuading them about the degree of soundness and reliability of its assets. The easiest way to reassure the potential bondholders on the actual value of the bonds is to include in the indenture a contractual device that enable them to easily control the company risk, a contractual device which is also easy to enforce, in other words a rating trigger. Therefore, the incorporation of a rating trigger may ultimately act as a signal of the company's sound financial conditions and of the company's ability to repay the debt. Consequently, a rating trigger is able to persuade bondholders to require a lower interest in exchange for a more effective control over the company's risk, consistently lowering the cost the company has to bear in order to raise debt capital.

4. The disadvantages of rating triggers

4.1 Rating triggers as a credit cliff enhancing factor

As described in the credit rating agencies' reports mentioned in section 2., the primary concern associated with the use of rating triggers relates to the ability of this kind of clauses to increase the overall bond market risk.

As remarked in the previous section, the inclusion of a rating trigger in a bond indenture is able to lower the cost of a company's debt by exchanging a portion of the interest required by bondholders for more pervasive control rights over the company risk. According to these dynamics, the inclusion of a rating trigger is in theory optimal for companies whose

probability to breach the rating threshold is sufficiently low so that the cost of the trigger's activation - discounted by its probability - is lower than the difference between the higher interest the company should have paid without including the rating trigger and the lower interest it actually pays thanks to the rating trigger's inclusion.

The above described dynamics refer to the rational way a company should use rating triggers, but in practice companies may be more irrational and short sighted and then decide to include a rating trigger even when the risk to be downgraded and to activate the trigger is significantly high. The consequences of such reckless behavior can seriously affect the company's financial stability. In fact, the economic structure of a rating trigger appears to be not so different from a risk event insurance device that grants a premium to the bondholders in the event of a rating downgrade, except that in such situation the insurer turns out to be the same entity affected by the damaging event.

Therefore, a company which subscribes several rating triggers without carefully estimating the risk of their activation is likely to be unexpectedly forced either to post additional collateral, to pay additional interests, to accelerate the payment of the principal or even to buy back the whole debt issued. If the impact of such enforceable actions has not been predicted and studied in advance, the company may precipitate into a severe liquidity stress condition.

In addition, it must be highlighted that while the company might be relatively able to control the negative or affirmative actions on which other types of covenants are based, it conversely cannot have the same degree of control over its own credit rating. In fact, a credit rating depends on several factors: some of them are related to the company's business model and its financial conditions, but some others pertain to the macroeconomic scenario and to the general financial market conditions, presenting a more exogenous character.

Therefore, it may not be easy for a company to accurately estimate in advance its probability of being downgraded, since the actual weight of many influential credit risk factors is known only to the rating agency itself and it is beyond the company's control.

Hence, the activation of a trigger regarding a weak or unprepared company could severely affect its ability to recover from the liquidity stress and then turn the downgrade into a default. In fact, if we assume that a rating downgrade usually occurs when the company's financial conditions are by default getting worse, the activation of the triggers could further drain the liquidity in the moment in which it is more difficult for the company to deal with this kind of shock. A trigger which affects a company weakened by a downgrade is in fact able to enhance a phenomenon known as "credit cliff", according to which the company's financial conditions, impaired by an event that deteriorates the company creditworthiness, are

made even worse by the need for liquidity that such deterioration has caused. According to these dynamics, a reckless use of rating triggers can start a snowball effect that in the most serious cases is able to push a company into a financial death spiral.

Moreover, under such a serious course of events, the triggers instead of protecting bondholders claims end up achieving the opposite goal, leaving them completely unsatisfied. In the most serious cases, the rating triggers, by forcing the company to file for bankruptcy, could even be able to leave bondholders themselves in financial distress, increasing not only the issuer's risk but also the overall debt market risk.

Over the last decades, rating triggers have mainly raised concerns due to this intrinsic contradiction they show: they're aimed at protecting bondholders' claims by limiting the risk bondholders have to bear, but if they're not carefully used they act as powerful destabilizing devices that contribute to increase and further spread the risk all over the company's debt holders. This contradiction can also be observed from the company/borrower point of view, since rating triggers, in theory aimed at lowering the borrower's cost of raising debt, if irrationally used are able to precipitate the company into a credit cliff situation, rising the cost of its debt to levels high enough to hinder the company's ability to refinance itself and to recover from the liquidity shock.

4.1 Rating triggers as a disturbance factor for rating agencies evaluations

Another problem associated with rating triggers concerns the relationship between these contractual provisions and the rating agencies themselves. In fact, the agencies perform their evaluations on issuers creditworthiness taking into account all the information they are able to collect from them and from other market sources.

However, despite their sophisticated character, the agencies are not always able to collect all the relevant information, since many documents are confidential and the companies may not be willing to disclose such deal of information if they fear it might have a detrimental effects on their final rating. This situation exactly applies to rating triggers, since they are very often included in loan contracts which are not made publicly available through the company annual disclosure. Therefore, the rating agencies may be completely unaware of the rating triggers that affect a company's stability and deteriorate its risk profile. Such situation appears

to be destabilizing for two main reasons: first because the agencies are not able to properly factor the risk posed by rating triggers into their creditworthiness evaluations and then they issue rating that are not perfectly corresponding to the company's actual risk profile; second - and most importantly - because the agencies are largely unaware of the broader and more serious consequences associated with their downgrades.

Every rating downgrade decided by the agencies is in fact supported by a specific study demonstrating that a particular issuer, according to several factors, has a certain risk profile. If such evaluation is itself able to trigger certain contractual devices that further deteriorate the risk of the assessed company, the agency's evaluation itself automatically does not fit anymore the worsened company's risk profile, becoming misleading and rather meaningless.

This mechanism appears to be even more dangerous if we consider that some studies have demonstrated that rating changes themselves can, under certain circumstances, have a pro-cyclical effect, increasing the positive or negative trend the rated company is experiencing²⁹. In this perspective, the activation of triggers can further exacerbate in a pro-cyclical way the downturn a company is facing, turning a negative but transient market trend into an irreversible impairment.

These concerns suggest that regulators should at least introduce a general duty to disclose all the contractual provisions whose activation is based on rating, regardless of the confidential nature of the deals in which they are included. Under such a stricter transparency regime the rating agencies would be able to incorporate rating triggers in their evaluations, taking them into account when deciding whether to downgrade or upgrade a rated company.

5. The scope of the analysis

In the light of the problems described above, the purposes of this research are: (1) to assess the magnitude of the use of rating triggers both in growing and in recessive phases of the economic cycle; (2) to assess how rating triggers are correlated with an issuer's credit rating, in order to evaluate the effects of such contractual provisions both on American and European companies; (3) to evaluate which type of regulatory intervention should be implemented in order to manage and restrain the most harming effects of rating triggers.

²⁹ See for instance Ferri, g. – Liu, l. - Joseph E. Stiglitz, , *The procyclical role of rating agencies: evidence from the East Asian crisis*, *Economic Notes*, 1999, 28, 335 (1999)

In order to achieve the first objective, I will assess the magnitude of the use of triggers and the variety of their content during different phases of the economic cycle. First, I will select a significant sample of American and European corporations that are listed on the securities market and belong to various industrial sectors. Then, since financial and loan contracts that contains triggers are frequently confidential or undisclosed, in order to develop a consistent study, I will restrict the analysis to the rating triggers incorporated in bond indentures, that, on the contrary, are more easily available.

For the purpose of this analysis I will consider the sampled companies' bond issues that have taken place from 2001 to 2011 in order to cover two periods of “bull” market (2003-2007 and 2009-2010) and two periods of “bear” market (2001-2003 and 2007-2009).

Then I will assess whether every bond issue containing triggers had taken place in a growing or in a recessive market period in order to evaluate whether different levels of market risk influence the use and the content of triggers.

A hypothesis that I intend to test is that rating triggers are more frequently used during recessive periods, when raising debt capital is more costly but when, at the same time, their activation is more harmful to issuers.

Then, after having assessed the incidence of triggers in bond issues during different market phases, I will monitor the issuers' credit rating performance in the same period the issues including the triggers take place in order to evaluate how the use of rating triggers affects the issuers' credit risk, leading to a change in their credit ratings.

In case the analysis shows that the inclusion of rating triggers in an issuer's bond indentures is positively correlated with its subsequent rating downgrades, it might mean that rating triggers are considered by the agencies as a significant risk factor and that the more they are used, the more they are likely to be activated by a downgrade.

Such a result would then be consistent with the “credit cliff enhancing” effect hypothesis, since it would demonstrate that especially in recessive periods, the mere inclusion of rating triggers in bond indentures can worsen the issuer's conditions in a way that may lead to a downgrade that activate the trigger itself, making the issuer financial situation more and more critical.

These examinations on the relationship between the use of rating trigger, the issuer credit rating and the market risk are ultimately aimed at assessing whether issuers make use of triggers in a rational way, taking into account the likelihood of triggers' activation, or, conversely, whether issuers show a more reckless and irrational behavior, including triggers in bond indentures when they are more likely to be activated. In fact, the observation of the

rating attributed to the issuer at the time the rating trigger was drawn, may show whether an issuer is more likely to include a rating trigger when its creditworthiness is weaker and then the trigger activation is more likely to occur.

The observation of such destabilizing pro-cyclical effect would also highlight the need for a regulatory intervention meant to counterbalance, in period of market stress, the overall risk resulting from the massive use of triggers.

The assessment of the possible regulatory solutions to the threat posed by rating triggers is the scope of the third objective of this research proposal.

Two main regulatory options have to be taken into consideration. The first (and “softer”) regulatory solution to be examined is the one usually proposed by the rating agencies themselves, which consists in requiring the issuers to disclose every single rating trigger they embed in their financial contracts.

This regime of mandatory disclosure has to be evaluated in his costs and benefits. On one side such disclosure requirements would be able to improve investors information by discouraging potential unprotected lenders/bondholders to enter financial contracts with borrowers/issuers that are affected by several rating triggers, then reducing the overall market risk; on the other side, mandatory disclosure cannot affect those rating triggers that are already in force, whose activation could be harmful in a period of severe crisis.

Therefore, the research should also encompass a second and more effective regulatory option, which is the one mentioned in the recent European Commission consultation paper, aimed at introducing flexibility clauses that under particularly critical market conditions allow issuers to temporarily delay the activation of rating triggers, preventing such clauses from being suddenly activated all together, in order to limit the increase of the default risk across financial markets.

This regulatory option will be carefully examined with regard to all its possible consequences and the incentives that it would provide to potential lenders. In fact, it is clear that such an intrusive regulatory interference in private financial contracting could deeply affect the rationale of rating triggers themselves: if lenders cannot rely on a timely activation of the trigger that secure their claims, they wouldn't accept the lower rate of interest associated with the same rating trigger, increasing the cost of debt borne by the issuer. Therefore, I will assess the implications and consequences of the trade-off between lower risk and higher cost of debt capital that issuers would face under a similar regulatory option.

As a result, the research will provide a thorough analysis of the correlation between the use of rating triggers and the issuers default risk during different market trends, suggesting whether the use of triggers should be further regulated. In addition, the research will provide a study on the regulatory options that could be implemented and their effects on issuers and bondholders.

6. The methodology followed in the research

In this research I will consider only the rating triggers included in bond indentures. The rationale underlying this choice depends both on a practical reason and on a substantial one. On a practical ground, bond indentures are publicly disclosed and easily available, whereas many other forms of loan and financial contracts involving rating triggers may not be accessible even to sophisticated actors like rating agencies themselves³⁰. Therefore, extending the research to triggers included in other types of debt contract could mean not being able to access all of the deals related to a borrower, resulting in an incomplete and misleading picture of the issuer's overall risk.

On a more substantial ground, issuing bonds is one of the most common way for corporations to raise capital, and, unlike bank loans, bond issues establish not just one contractual relationship with a few powerful sophisticated debt holders, but a more complex nexus of contractual links with a very broad and diverse number of bondholders, that are dispersed all over the global market. Hence, a contractual clause that is able to impact on the risk faced by such a complex nexus of debt holders appears in first place to be highly disruptive for market overall risk and then more significant for the purpose of the present research. In fact, the disperse character of such bondholders would probably make the consequences of the trigger's activation even more hard to predict and more difficult to limit,

³⁰ In fact, for a long time according to certain set of accounting principals, a company had the duty to disclose its debt covenants only if they could have been considered "material", hence only those triggers that had severely impacted on the company financial situation had to be mandatorily disclosed. See GONZALEZ, F. - HAAS, F. - JOHANNES, R. - PERSSON, M. - TOLEDO, L. - VIOLI, R. - WIELAND, M. - ZINS, C., *Market dynamics associated with credit ratings*, European Central Bank occasional paper no. 16/ June 2004, page 14: "Present accounting standards leave a significant degree of discretion as to whether triggers need to be disclosed. Under US (GAAP/FAS), UK (FRS) and international accounting standards (IAS) there is an obligation to disclose material triggers, but material in this context means not only that the contingent obligation is large, but that it potentially has a significant bearing on the company's financial situation. For instance, these requirements do not appropriately address situations where an issuer/borrower has included many "nonmaterial" triggers in its debt covenants/bond issues".

enhancing dangerous risk contagion dynamics in the debt market.

With regard to the analysis' key factors, in order to obtain consistent results it is important to choose a significant observation time and a significant sample of issuers. As I have already mentioned in the previous section, I have decided to choose the decade included between January 1st, 2001 and January 1st 2011. This particular period is interesting first because it is recent and then allow us to discover how the use of rating triggers have evolved from the time of the early Moody's and Standard & Poor's reports to the present days. Second, the selected timespan is composed by two periods of increasing financial markets (2003-2007 and 2009-2010), usually corresponding to a lower market instability risk and hence a lower risk to be downgraded, and two periods of declining financial markets (2000-2003 and 2007-2009), usually associated with higher market instability and higher probability to be downgraded, because a significant part of rating key factors are related to the conditions of the overall market environment in which the issuer's business take place. Therefore, it is important to evaluate the use of rating triggers under opposite market trends, in order to understand whether issuers tend to incorporate triggers in bond indentures when the risk of their activation is lower (under "bull" market conditions) and hence when they pose a minor threat for overall market risk or, conversely, whether issuers tend to use rating triggers when they are more likely to be activated (under "bear" market conditions) and thus when they are more disruptive for market stability.

In order to choose a significant sample of issuers, I have decided to observe different companies indexes in order to obtain more diversified results, starting with a narrower sample and then extending the analysis to a broader one. Therefore, I have started assessing all the bond indentures issued by companies included in the Dow Jones Industrial Average index, which in my opinion represents a sound starting point in order to clarify whether the use of rating triggers is widespread among the most important US corporations or, conversely, whether it has a more limited and sector-specific diffusion. Then I will proceed assessing the companies that are part of the Standard & Poor's Global 100 index, which I consider particularly significant not only because it is a broader index, but also because it includes both US and non-US corporations and then it can be very useful to assess whether the use of rating triggers is more common among American issuers or among foreign ones. In case this assessment will show mixed or ambiguous results so to require further investigation, I might decide to extend the analysis to even broader companies indexes, such as the Standard and Poor's 500.

In the total sample of the examined bond indentures I will include both active and non-active

issues, that will be collected and analyzed through the use of two financial databases: *Bloomberg* and *Mergent Bond Viewer*. In order to obtain even more accurate and thorough results, I will perform - when possible - a sort of double-check on the data by also assessing the issuer's annual financial statements in order to ensure whether and to which extent the use of rating triggers and the risk associated to them are therein mentioned.

As stated above, every time I will find a rating trigger in a bond indenture I will check the rating attributed to the issuer at the time the issue took place, in order to incorporate in the analysis another important risk factor. In fact, the consequences of rating triggers can be more severe if the issuer uses such clauses when its rating is low and then its credit risk is intrinsically higher, making the activation of the trigger more likely to occur. On the contrary, if the triggers are used by issuers with prime ratings and then sound risk profiles, such clauses are less likely to harm the issuers themselves and the market in general. In this regard, I will take into account only the ratings issued by the three historically major rating agencies, i.e. Moody's, Standard and Poor's and Fitch, since in most of the cases only the ratings issued by these agencies are regarded by the parties as a parameter for the trigger's activation.

Furthermore, in order to assess even more accurately the relationship between the use of rating triggers and the risk faced by the issuer, I will also measure the Altman Z-score³¹ of any issuer at the time it used the rating trigger. The measurement of such risk parameter will provide me with a more reliable risk profile of the issuer at the time of the trigger's inclusion into the bond indenture. If the Z-scores shows that most of the issuers tend to use rating triggers when their financial conditions are impaired and they are closer to bankruptcy, it would confirm that issuers use such clauses when their activation is more likely to occur, posing an actual risk for the market. Under such a scenario, I would assess the need of a regulatory intervention aimed first at disclosing, then at delaying or blocking the activation of triggers, whose effects would appear to be lethal for the issuer's life and for the overall market risk.

31 The Altman's Z-score is a parameter created by professor Edward Altman in 1968 (see Edward I. Altman, *Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy*, *Journal of Finance*, Sept., 189 (1968)) in order to measure the likelihood of a company bankruptcy. The model developed by Altman combines several different financial ratios in order to obtain a score related to the company financial stability: the lower is the score, the higher is the probability for the company to go bankrupt. Companies showing a Z-Scores above 3 are considered to be sound and unlikely to go bankrupt, while scores in between 1.8 and 3 are considered a sort of borderline area.

7. The hypotheses to be tested

As described above, in performing this research I mean to test the following hypotheses:

1. The use of rating trigger by bond issuers has been widespread in the last decade.
2. A significant part of the issuers that use triggers, tend to use the most risky form of triggers (i.e. acceleration triggers, termination triggers, etc.)
3. The issuers tend to use rating triggers in order to lower the cost of raising debt capital especially when their financial stability is deteriorating (as shown by their ratings and by their Altman's Z-scores) and thus when they bear a higher default risk.
4. Since a consistent part of issuers appears to use rating triggers under risky conditions that make their activation more likely to occur, there's an emerging need for a specific regulation on this particular field.

8. Potential conclusions

According to the above described assumptions, the research could result in different outcomes.

First, the research may show that the use of rating trigger is not widespread among a significant sample of issuers within and outside the US. In this case, of course the conclusion would be that rating triggers do not pose an actual threat on the overall market risk and thus they do not need to be regulated.

Second, the research may show a widespread use of triggers yet associated with issuers that have low-risk profiles. Also in this case, no need for any strict regulation would emerge, except maybe for the introduction of a mandatory disclosure regime, that could provide the market with a better information on the issuer risk profile and that could allow the agencies to factor the use of triggers in performing the issuers' evaluations.

Third, the research may show a widespread use of triggers, associated with issuers that have a high risk profile and weak financial conditions, hence posing the threat of a very likely and rather harmful activation of such clauses. Under this scenario, the use of rating triggers would remarkably affect the overall market stability by increasing market risk and then the regulator should intervene setting rules that allow, when the triggers' activation is very likely to push the issuer into bankruptcy, to delay or to block the triggers' activation itself, in order to limit its destabilizing effects.

Finally, the research may show that rating triggers are used by a limited number of companies, which have a high-risk profile, making the triggers activation an imminent yet limited threat for market stability. In this case, the choice on the regulatory option to implement would rest with the regulator itself, according to the strategic importance of the companies affected.