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A Strict Liability Regime for Rating Agencies

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Introduction

The behavior of Credit Rating Agencies (CRAs) has received careful scrutiny in the past decade, particularly in the aftermath of the global financial crisis. This is with good reason. According to the law and economics literature, ratings are valuable for the society because they reduce asymmetric information in finance.[1] In this perspective, the function of CRAs is to provide investors with certifications of the quality

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[1] *See, e.g.*, Lawrence J. White, *Markets: The Credit Rating Agencies*, 24 J. Econ. Perspectives 211, 212–13 (2010) ("The purpose of credit rating agencies is to help pierce the fog of asymmetric information by offering judgments—they prefer the word 'opinions'—about the credit quality

of financial assets, which is a form of gatekeeping.[2] CRAs are performing this beneficial role in financial markets so long as the ratings they produce are above a certain accuracy threshold, which for simplicity we assume to be exogenously determined by the existing forecasting technology. Ratings are informative, thus valuable, because such technology is not available to the public. The problem of asymmetric information applies to financial regulators too, which explains why financial regulation is reliant on ratings for a number of purposes.[3] Conversely, when they are systematically higher than warranted, ratings may fuel asset bubbles and eventually lead to financial crises. Given the pivotal role played by CRAs in financial markets, it is of vital importance to develop a framework that provides CRAs with optimal incentives to issue accurate ratings. In this article, we attempt exactly this task.

Unsurprisingly, on both sides of the Atlantic, the regulatory reaction to the global financial crisis also focused on rating agencies.[4] Legislators have tried simultaneously to police the CRAs' conflicts of interest through regulation and to make them more accountable for their mistakes, overcoming the traditional insensitivity of CRAs to the threat of

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of bonds that are issued by corporations, U.S. state and local governments, 'sovereign' government issuers of bonds abroad, and (most recently) mortgage securitizers.").

[2]*See* Reinier H. Kraakman, *Gatekeepers: the Anatomy of a Third-Party Enforcement Strategy*, 2 J. L. Econ. & Org. 53, 54 (1986); Gregory Husisian, *What Standard of Care Should Apply to the World's Shortest Editorials? An Analysis of Bond Rating Agency Liability*, 75 Cornell L. Rev. 411, 421 (1990) (arguing that rating agencies add value because they analyze issues less expensively than the average investor); Susan M. Phillips & Alan N. Rechtschaffen, *International Banking Activities: The Role of the Federal Reserve Bank in Domestic Capital Markets*, 21 Fordham Int'l L.J. 1754, 1762–63 (1998) ("Finally, credit rating agencies enhance the capital markets infrastructure by distilling a great deal of information into a single credit rating for a security. That rating reflects the informed judgment of the agency regarding the issuer's ability to meet the terms of the obligation. Such information is frequently critical to potential investors and could not be acquired otherwise, except at substantial cost.").

[3]*See* John C. Coffee, Jr., *Ratings Reforms: The Good, The Bad and the Ugly*, 1 Harv. Bus. L. Rev. 231, 261 (2011) ("Some believe that the basic error made by regulators was to grant ratings agencies a de facto regulatory role. In truth, this decision, which dates back to the 1930s in the United States, was the product of the inability of financial regulators to define excessive risk themselves.").

[4]For an overall comparative analysis of the regulatory approaches towards CRAs in the European Union and in the United States, see generally Aline Darbellay, Regulating Credit Rating Agencies (2013).

liability.[5] In this vein, different from the past, some recent attempts to impose liability on rating agencies have been successful. Australian courts found Standard & Poor's liable for misleading investors on structured finance products rated triple-A.[6] And in the United States, Standard & Poor's ultimately settled for payment of $1.5 million in the lawsuit brought against them by the U.S. Department of Justice and a few other states.[7]

Only time will tell whether these outcomes can be generalized. Undoubtedly, however, CRAs face today an increased liability threat and more regulatory constraints on their operation.[8] The desirability

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[5]Before the Dodd- Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, 124 Stat. 1376 (2010) [hereinafter Dodd-Frank Act], CRAs were largely immune to liability in the United States. *See* Frank Partnoy, *How and Why Credit Rating Agencies Are Not Like Other Gatekeepers*, *in* Financial Gatekeepers: Can They Protect Investors? 61 (Yasuyuki Fuchita & Robert E. Litan eds., 2006). *See* also John C. Coffee, Jr., Gatekeepers: The Professions and Corporate Governance 302 (2006) (emphasizing that CRAs had enjoyed *de facto* immunity to liability). CRAs were immune to legal liability for various reasons. For one, some U.S. courts placed ratings under the umbrella of the first amendment. *See* Jefferson Cty. Sch. Dist. No. R-1 v. Moody's Investor's Serv., Inc., 175 F.3d 848, 852–56 (10th Cir. 1999); *In re* Enron Corp. Sec. Derivative & ERISA Litig. 511 F. Supp. 2d 742, 819–27 (S.D. Tex. 2005) (analyzing case law addressing first amendment protection). For arguments against these decisions, see Caleb Deats, Note, *Talk That Isn't Cheap: Does The First Amendment Protect Credit Rating Agencies' Faulty Methodologies From Regulation?*, 110 Colum. L. Rev. 1818, 1818 (2010). Along similar lines, it was practically impossible to sue CRAs for fraud under Securities and Exchange Commission (SEC) Rule 10b-5 until the pleading standard—particularly regarding the showing of scienter—was lowered by section 933 of the Dodd-Frank Act. *See* Coffee, *supra* note 3, at 267–68. Finally, SEC Rule 436(g) exempted CRAs from liability as experts under section 11 of the Securities Act of 1933. Adoption of Integrated Disclosure System, 47 Fed. Reg. 11,380, 11,391 (Mar. 18, 1982). Rule 436(g) was abolished by section 939G of the Dodd-Frank Act, *supra*.

[6]ABN AMRO Bank NV v Bathurst Regional Council [2014] FCAFC 65 (Austl.) (confirming the decision by the court of first instance to hold Standard & Poor's liable for negligently deceiving investors through inflated ratings).

[7]*See* Aruna Viswanatha & Karen Freifeld, *S&P reaches $1.5 Billion Deal With U.S., States over Crisis-era Ratings,* Reuters (Feb. 3, 2015, 1:46 PM), http://www.reuters.com/article/2015/02/03/us-s-p-settlement-idUSKBN0L71C120150203. Interestingly, the Department of Justice decided to bring suit against S&P's based on the private cause of action of a long-standing statute, the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA), Pub. L. No. 101-73, 103 Stat. 183 (1989). Under FIRREA, the plaintiff needs to establish its claim under a preponderance of evidence standard avoiding the more demanding requirements of criminal law enforcement.

[8]For example, among other things, the Dodd-Frank Act creates the "Office of Credit Rating" to monitor and control CRAs behavior. Dodd-Frank Act, *supra* note 5, § 939C. Also,

of this outcome from a legal and economic perspective is not obvious.[9] On the one hand, imposing liability on CRAs can counter their tendency to inflate ratings. On the other hand, the threat of liability may induce CRAs to issue ratings that are overly conservative whenever the sanction is asymmetric—namely, when only ratings that are higher than warranted are punished.[10] This is the outcome of imposing on CRAs liability for failure to exercise due diligence, as several provisions of the Dodd-Frank Act have done.[11] Although until very recently the literature and the policy debate have ignored this trade-off,[12] a recent empirical study suggests that, after the introduction of CRAs' fault liability by the Dodd-Frank Act, the ratings of corporate bonds have become even less informative than in the precrisis period.[13] In other words, empirical evidence suggests that, if precrisis, "[t]he story of the credit rating agencies is a story of colossal failure" due to systematic misreporting of creditworthiness

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the consistency of the methodologies adopted by CRAs is checked annually. With regards to the enhanced liability threat, see Valentin Dimitrov et al., *Impact of the Dodd-Frank Act on Credit Ratings*, 115 J. Fin. Econ. 505, 506 (2015) ("Dodd-Frank significantly increases CRAs' liability for issuing inaccurate ratings by lessening the pleading standards for private actions against CRAs under Rule 10b-5 of the Securities and Exchange Act of 1934.").

[9]For a legal analysis, see Nan S. Ellis et al., *Is Imposing Liability on Credit Rating Agencies a Good Idea? Credit Rating Agency Reform in the Aftermath of the Global Financial Crisis,* 17 Stan. J.L. Bus. & Fin. 175, 221–22 (2012) (arguing that CRAs should be subject to a credible threat of liability). For a treatment of this problem from an economic perspective see Dimitrov et al., *supra* note 8, at 513–14 (showing that liability might be counterproductive).

[10]Anand M. Goel, & Anjan V. Thakor, *Credit Ratings and Litigation Risk*, 1 (Mar. 15, 2011), *available at* http://ssrn.com/abstract=1787206 ("If the legal liability increases asymmetrically—higher legal liability only for ratings deemed ex post to be too high—the rating agency responds by increasing its downward bias in ratings.").

[11]*See supra* note 5 and accompanying text. Other jurisdictions have likewise introduced negligence liability for CRAs. *See infra* note 62 and accompanying text.

[12]Dimitrov et al., *supra* note 8 and Goel & Thakor, *supra* note 10, are notable exceptions. Both works investigate the defensive conduct of CRAs in the face of liability.

[13]Dimitrov et al., *supra* note 8, at 507 (showing empirical evidence supporting the view that the Dodd-Frank Act has reduced the informative content of ratings of corporate bonds). Structured finance products were excluded from that study and in any event, the case of structured finance bonds is radically different. *See infra* notes 137–39 and accompanying text.

by CRAs,[14] and the Dodd-Frank Act has only made matters worse by further reducing ratings' informative content.[15]

The starting point of our analysis is that the market for credit ratings fails to generate an efficient outcome, namely, ratings that are as accurate as possible. For the purpose of this article, we consider a rating accurate when the defaults actually observed for a given class of rating fall within the range of probabilities and other measurable items (for instance, loss given default) implied by the CRA issuing a certain letter grade. Conversely, we define inaccurate as a rating whose implied predictions is not borne out by the actual unfolding of events. To simplify, a rating with a certain letter grade (for example Double-A+) is inaccurate if the frequency of default of firms or bonds with that letter grade is higher or lower, respectively, than the maximum (for example 0.0006) and the minimum (for example 0.0002) probability of default associated with the letter grade.[16] When the frequency of defaults turns out to be higher than the upper bound on the predicted probability of default, we speak of rating inflation.[17] In the opposite case (i.e., *ex post* frequency lower than the *ex ante* probability of default), we speak of rating deflation. Rating inaccuracy chiefly depends on two factors. First, it could derive from the imperfections in the forecasting models. Second, it could depend on the intentional misuse of the same models.[18] Ideally, regulators should provide CRAs incentives to reduce the first source of inaccuracy, while preventing the second altogether.

The existing legal and economic literature considers two broad ways to police CRAs' incentives. One is the regulation of the market in which they operate. The other is sanctioning the production of inaccurate ratings. Although we discuss direct regulation of the market for ratings, we observe that this approach has failed to produce a workable policy to support

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[14]Amit R. Paley, *Credit-Rating Firms Grilled Over Conflicts: Risks Were Known, Documents Show*, Wash. Post, Oct. 23, 2008, at Al (quoting Representative Henry A. Waxman, The Chairman of the House Committee on Oversight and Government Reform).

[15]Dimitrov et al., *supra* note 8, at 507.

[16]The example is taken from Fitch's historical (annualized) default experience. Joshua Coval et al., *The Economics of Structured Finance*, 23 J. Econ. Perspectives 3, 9 (2009).

[17]For a formal definition of rating inflation, see Part III.

[18]In the economic literature, rating inflation generally refers only to intentional misreporting. *See, e.g.*, Patrick Bolton, Xavier Freixas & Joel Shapiro, *The Credit Ratings Game,* 67 J. Fin. 85, 95 (2012). We adopt a broader definition of rating inflation because, from a practical perspective, we argue that it is generally very hard to distinguish cases of intentional misreporting.

accurate ratings. Because we believe that the design of an optimal regulation of CRAs would require knowledge of variables unobservable to the regulator, we prefer to focus on the provision of incentives through liability. In doing so, we look at civil liability more carefully than has been done so far.[19] To the best of our knowledge, we are the first to design a complete strict liability regime for CRAs that (1) discourages rating inflation without encouraging rating deflation, (2) shields CRAs from systemic risk, and (3) relies on the market mechanisms instead of on detailed regulations to police CRAs' behavior.

In discussing CRAs' liability, the existing literature generally considers negligence as a possible standard of review for CRAs' conduct.[20] Although it seems straightforward to punish CRAs only in case of misconduct, what constitutes misconduct in the production of ratings is inherently ambiguous.[21] Courts cannot possibly resolve this ambiguity *ex post*. Consequently, the imposition of negligence liability induces CRAs to base their rating decisions on a more mechanical due diligence, making ratings more conservative and less informative (as the evidence on post–Dodd-Frank Act corporate bonds reveals),[22] or even to refuse rating altogether unless liability is waived, as in the case of structured finance products.[23]

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[19]For example, Bolton et al., *supra* note 18, at 106, recognize that increasing CRAs liability exposure might reduce rating inflation, yet they do not investigate how the liability mechanism should work.

[20]*See, e.g.*, Coffee, *supra* note 3, at 252–53; Yair Listokin & Benjamin Taibleson, *If You Misrate, Then You Lose: Improving Credit Rating Accuracy Through Incentive Compensation*, 27 YALE J. ON REG. 91, 101–02 (2010). *But see* Partnoy, *supra* note 5, at 96 (suggesting that a modified form of strict liability could be introduced for CRAs, like for other gatekeepers).

[21]Coffee defines the process of defining and controlling CRAs care level a "Serbonian bog." John C. Coffee, Jr., *Gatekeeper Failure and Reform: The Challenge of Fashioning Relevant Reforms*, 84 B.U. L. REV. 301, 347 (2004).

[22]*See* Dimitrov et al., *supra* note 8, at 507.

[23]As mentioned *supra* note 5, Dodd-Frank Act § 939G eliminated CRAs' exemption from liability under under section 11 of the Securities Act of 1933. As a result, CRAs went on "strike" and refused to be named as experts in the prospectus of any securitization. Because the SEC Regulation AB does not allow asset-backed securities to be offered without disclosure of their ratings, initially the U.S. securitization market froze. The SEC subsequently issued two no-action letters—the first establishing a six-month moratorium and the second extending it indefinitely—with which they allowed securitizations to go through without the inclusion of ratings in the prospectus. *See* Ford Motor Credit Co. LLC, SEC No-Action Letter (Nov. 23, 2010), *available at* http://www.sec.gov/divisions/corpfin/cf-noaction/2010/ford072210-1120.htm. In this way, CRAs may effectively participate in securitizations without being exposed to Section 11 liability.

Somewhat counterintuitively, we argue that strict liability of CRAs for the default of rated issuers or bonds would lead to the production of more accurate ratings, without driving CRAs out of the market. More precisely, we recommend holding CRAs liable whenever a bond or a company they rate defaults regardless of the rating issued. At first glance, this mechanism seems unworkable as an unlimited strict liability of this kind would drive all rating agencies out of the market. Therefore, we argue for strict liability accompanied by three strong limitations. First, cap damage compensation at a multiplier of the CRA's income and of the rating assigned.[24] Second, adequately shield CRAs from systemic risk. Third, allow CRAs to decide how much to commit to their ratings by choosing a certain degree of liability exposure,[25] at least whenever there are no regulatory benefits stemming from high ratings.[26]

In order to appreciate why a strict liability rule shaped in such a way would provide CRAs with optimal incentives to issue accurate ratings—without placing an excessive burden on them—we start with discussing in Part I what is broken in the market for rating. In Part II, we introduce our strict liability rule with a simple numerical example. In Part III, we illustrate in two phases how capped strict liability prevents CRAs from inflating ratings. First, we present this result under simplifying assumptions. Second, we show that the choice of liability exposure by CRAs can lead to the same result under the more realistic assumptions of imperfect foresight and unobservability of reputation effects and other key variables. In Part IV, we discuss the problem of systemic risk and how the strict liability rule should be corrected to cope with this problem in the two cases of corporate bonds and structured finance products. In Part V, we illustrate the key

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[24]The need for a cap in CRAS' liability regime has long been recognized. *See, e.g.*, Coffee, *supra* note 3, at 253 ("[A]ny cause of action against the CRAs should logically be coupled with a ceiling on liability to ensure that the deterrent threat does not lead to the financial destruction of an arguably necessary financial intermediary.").

[25]From this perspective, our proposal somehow echoes the self-tailored liability regime for gatekeepers advocated by Professor Stephen Choi. Stephen Choi, *Market Lessons for Gatekeepers*, 92 Nw. U. L. Rev. 916, 919 (1998) (arguing that "[t]hrough self-tailored liability, regulators may allow intermediaries to choose from a range of different criminal penalties as well as invoke public enforcement and monitoring").

[26]*See infra* notes 38–40 and accompanying text.

advantages of our proposal in disciplining CRAs' behavior. We briefly conclude.

I. The Problems in the Market for Ratings

Referring to CRAs, Professor Paul Krugman wrote that

> It was a system that looked dignified and respectable on the surface. Yet it produced huge conflicts of interest. Issuers of debt . . . could choose among several rating agencies. So they could direct their business to whichever agency was most likely to give a favorable verdict, and threaten to pull business from an agency that tried too hard to do its job.[27]

As there is a conflict of interests because CRAs' incomes derive from the same issuers they rate (the so-called issuer-pays model),[28] it is natural for CRAs to maximize their profit by overrating issuers.[29] Furthermore, an issuer pays for a rating only if it requests publication, which the issuer will do only if it is satisfied with the letter grade received. Hence, a disgruntled issuer can always solicit another rating if—as currently is the case—there are more than one CRA on the market and they compete for fee income. This practice of contacting more CRAs to obtain the most favorable rating possible is called "rating shopping."[30]

Trying to police the conflict of interests stemming from this payment mechanism has proven difficult. While a number of commentators have argued that moving away from the issuer-pays model could solve the problem,[31] no jurisdiction has ever considered going that far. To be

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[27]Paul Krugman, *Berating the Raters,* N.Y Times (April 25, 2010), http://www.nytimes.com/2010/04/26/opinion/26krugman.html?_r=0.

[28]Frank Partnoy, *The Siskel and Ebert of Financial Markets?: Two Thumbs Down for the Credit Rating Agencies*, 77 WASH. U. L.Q. 619, 652 (1999) ("Perhaps the most important change in the credit rating agencies' approach since the mid-1970s has been their means of generating revenue. Today, issuers, not investors, pay fees to the rating agencies. Ninety-five percent of the agencies' annual revenue is from issuer fees.").

[29]*See,* e.g., Deryn Darcy, *Credit Rating Agencies and the Credit Crisis: How the Issuer Pays Conflict Contributed and What Regulators Might Do About It*, 2009 Colum. Bus. L. Rev. 605, 622–31.

[30]*See* Kia Dennis, *The Rating Game: Explaining Rating Agency Failures in the Buildup to the Financial Crisis*, 63 U. Miami L. Rev. 1111, 1137 (2009).

[31]*See* Marco Pagano & Paolo F. Volpin, *Credit Ratings Failures and Policy Options*, 25 Econ. Pol'y 401, 420–22 (2010) (acknowledging that imposing an investor-pays model by

sure, there are economic reasons behind the choice of the issuer-pays model. Ratings have public good features—the use of ratings does not diminish their availability to others; and investors who do not pay for ratings can hardly be excluded from their use—making the opposite, investor-pays model unworkable as such.[32] Moreover, the CRA industry has resisted intensely the regulatory initiatives impinging on their business model. For instance, in the United States, Senator Al Franken proposed disallowing individual companies from choosing a single CRA. According to this proposal, an independent board should assign CRAs to the issuers paying for their services, in order to reduce the conflict of interests. The Franken Amendment, however, was watered down significantly in the Dodd-Frank Act and may never be implemented.[33]

In any case, the conflict of interests created by the issuer-pays model is not sufficient to explain rating inflation. A price can be charged for rating only because investors believe that rating agencies are communicating valuable and accurate information.[34] If CRAs systematically issue unwarranted

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regulation would require coping with some practical problems); Jerome Mathis et al., *Rating the Raters: Are Reputation Concerns Powerful Enough to Discipline Rating Agencies?*, 56 J. Monetary Econ. 657, 669 (2009).

[32]Partnoy, *supra* note 28, at 662 ("[T]he credit information that credit agencies discover and disseminate has the characteristics of a public good, and therefore is immediately available to all market participants at zero cost."); *see also* Coffee, *supra* note 3, at 255 ("A 'subscriber pays' model may be doomed to failure by the 'public goods' nature of ratings. Because the rating agency cannot effectively prevent the communication of its ratings to non-paying investors once it discloses its ratings to its clients, it cannot capture the full value of the financial information that it creates."). *But see* Pagano & Volpin, *supra* note 31, at 420–23 (arguing that the investor-pays model could be adapted to cope with the public good problem).

[33]Dodd-Frank Act, *supra* note 5, section 939F(b) mandates a SEC study of the funding system of CRAs to determine whether the Franken proposal or a variation thereof would be appropriate. The SEC published this study in December 2012, with almost half a year delay. SEC, Report to Congress on Assigned Credit Ratings (Dec. 24, 2012), *available at* http://www.sec.gov/news/studies/2012/assigned-credit-ratings-study.pdf. The study recommended a roundtable with the relevant stakeholders, which took place on May 14, 2013. After completing these investigations, the SEC could have used its statutory authority to regulate the funding of CRAs. So far, however, the SEC has refrained from doing so.

[34]This is in line with the so-called reputational capital view of rating agencies. *See* Choi, *supra* note 25, at 961 ("The value of both debt rating agencies lies in their ability to convince financial purchasers of the validity and accuracy of their ratings."). *See also* Jonathan R. Macey, *Wall Street Versus Main Street: How Ignorance, Hyperbole, and Fear Lead to*

high ratings to attract more customers, rational investors will no longer consider CRAs a reliable source of information. Obviously, when investors do not consider ratings reliable, they do not take them into account to set their investment strategies, thus making ratings worthless for issuers. In other words, because ratings are valuable only as far as they are considered informative by investors, in a well-functioning market, reputational sanctions should prevent rating inflation.[35]

The legal and the economic literature have identified a number of market failures that, in the absence of a credible liability threat, induce CRAs to systematically inflate their ratings. First, the leading economic literature identifies investors' naivety as a major source of rating inflation.[36] As stated above,[37] rational investors would punish CRAs for misreporting, yet not all investors are necessarily rational and sophisticated enough to identify inaccurate ratings. If this condition is not met (more precisely, if a sufficiently large number of investors are naïve) the market cannot adequately punish rating inflation and hence reputational sanctions become a weak constraint.

Second, because high ratings have come to provide significant regulatory benefits to investors (including, for instance, lower capital requirements for banks), regulated investors simply demand assets with high ratings regardless of whether high ratings effectively reflect high creditworthiness.[38] More specifically, if regulatory benefits of high ratings are above a certain threshold, a rating agency "finds it profitable to stop acquiring any information and merely facilitates regulatory arbitrage

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Regulation, 65 U. Chi. L. Rev. 1487, 1500 (1998) ("Indeed, the only reason that rating agencies are able to charge fees at all is because the public has enough confidence in the integrity of these ratings to find them of value in evaluating the riskiness of investments.").

[35]*See, e.g.*, Steven L. Schwarcz, *Private Ordering of Public Markets: The Rating Agency Paradox*, 2002 U. Ill. Rev. 1, 26 ("Rating agencies are already motivated to provide accurate and efficient ratings because their profitability is directly tied to reputation.").

[36]*See* Bolton et al., *supra* note 18, at 86. Also legal scholars have often referred to a similar problem. Miller and Rosenfeld argue that investors sometimes looked at ratings without inquiring into their credibility. Geoffrey P. Miller, & Gerald Rosenfeld, *Intellectual Hazard: How Conceptual Biases in Complex Organizations Contributed to the Crisis of 2008*, 33 Harv. J.L. & Pub. Pol'y 807, 828–29 (2010). *See also* Claire A. Hill, *Why Did Anyone Listen to the Rating Agencies After Enron?*, 4 J. Bus. & Tech. L. 283, 283–84 (2009).

[37]See *supra* notes 34–35 and accompanying text.

[38]*See* Partnoy, *supra* note 28, at 681, 703.

through rating inflation."[39] This has an important corollary. To the extent that inflated ratings depend on a demand by regulated investors, having investors rather than issuers pay for them cannot possibly ameliorate the problem.[40] So long as enough regulated investors demand high ratings irrespective of their informativeness, even switching to an investor-pays model could not stop rating inflation.

One may wonder why we need liability to cope with this problem. If we know that the regulatory benefits attached to high ratings are a major determinant of rating inflation, it may be easier to eradicate the roots of the problem. In this vein, it has been argued that all references to credit ratings should be scrapped from financial regulation in order to eliminate the regulatory benefits from high ratings.[41] In the United States, the Dodd-Frank Act has followed this approach requiring all federal agencies to remove references to ratings and requirements of reliance for regulatory purposes.[42] This process was formally completed after a few years. However, it is doubtful whether U.S. law ceased the benefits, however indirect, from reliance on ratings.[43] At the same time, the law of the European Union explicitly acknowledged that scrapping ratings from financial regulations would not eliminate the benefits of relying on them.[44]

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[39]Christian C. Opp et al., *Rating Agencies in the Face of Regulation*, 108 J. Fin. Econ. 46, 47 (2013).

[40]Charles W. Calomiris, *A Recipe for Ratings Reform*, Economists' Voice 1 (Nov. 2009), *available at* http://www.degruyter.com/view/j/ev.2009.6.11/ev.2009.6.11.1678/ev.209.6.11.1678.xml?format=INT.

[41]*See* Mark J. Flannery et al., *Credit Default Swap Spreads as Viable Substitutes for Credit Ratings*, 158 U. Pa. L. Rev. 2085, 2095 (2010) (arguing that credit default swap spreads would be a valid substitute).

[42]Dodd-Frank Act, *supra* note 5, section 939A requires each federal agency to remove references to credit rating. The implementation of this provision has proven difficult, although major agencies like the Federal Reserve Board and the SEC have ultimately found ways to issue the necessary regulations. For the Federal Reserve Board, see *Implementing the Dodd-Frank Act: The Federal Reserve Board's Role* Fed. Res. Bd., http://www.federalreserve.gov/newsevents/reform_milestones.htm (last visited June 28, 2015); for the SEC's implementing measures concerning credit rating agencies, see *Credit Rating Agencies*, SEC, http://www.sec.gov/spotlight/dodd-frank/creditratingagencies.shtml (last visited June 28, 2015).

[43]A part of the problem stems from the circumstance that the performance of money managers is assessed in comparison to their peers. This gives money managers an incentive to rely on ratings, so long as other market players do the same, in order to shield themselves from litigation when they perform poorly. *See* Claire A. Hill, *Justification Norms Under Uncertainty: A Preliminary Inquiry*, 17 Conn. Ins. L.J. 27, 37–40 (2010).

[44]The regulatory approach in the European Union has been different from that in the United States. While EU legislation also aims at reducing overreliance on ratings, it

Regardless of its feasibility, this approach appears too farfetched. Ratings were granted regulatory value exactly because CRAs play a crucial role in overcoming information asymmetries not only between issuers and investors, but also between the latter and financial regulators.[45] In the absence of viable alternatives to assess creditworthiness and credit risk, it is doubtful that financial regulation could operate without ratings.[46] The policy goal, therefore, should be inducing CRAs to issue accurate ratings in the presence of regulatory benefits, while taking the issuer-pays model as given.

Abandoning the realm of radical reforms, more modest regulatory approaches likewise suffer from serious drawbacks. Consider, for example, two popular incremental reforms in the policy debate. One is to increase competition between CRAs.[47] The other is to increase the transparency of their ratings.[48] Both reforms aim at reducing the ability of CRAs to collude with issuers or investors to generate inflated ratings. However, competition between CRAs is set to make matters worse due to rating shopping. Because issuers can solicit as many ratings as they wish

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explicitly acknowledges that financial regulation cannot simply do away with ratings in the absence of viable alternatives. *See* Recital 72 of Directive 2013/36/EU, the so-called Capital Requirements Directive IV ("Overreliance on external credit ratings should be reduced and the automatic effects deriving from them should be gradually eliminated. Institutions should therefore be required to put in place sound credit-granting criteria and credit decision-making processes. Institutions should be able to use external credit ratings *as one of several factors in that process but they should not rely solely or mechanistically on them*." (emphases added)); Recital 6 of Regulation 462/2013, the so-called CRA Regulation III ("The Union is working towards reviewing, at a first stage, whether any references to credit ratings in Union law trigger or have the potential to trigger sole or mechanistic reliance on such credit ratings and, at a second stage, all references to credit ratings for regulatory purposes with a view to deleting them by 2020, *provided that appropriate alternatives to credit risk assessment are identified and implemented*." (emphases added)).

[45]Coffee, *supra* note 3, at 261. ("Some believe that the basic error made by regulators was to grant ratings agencies a *de facto* regulatory role. In truth, this decision, which dates back to the 1930s in the United States, was the product of the inability of financial regulators to define excessive risk themselves.").

[46]*Id*. at 264–66.

[47]Claire A. Hill, *Limits of Dodd-Frank's Rating Agency Reform*, 15 Chap. L. Rev. 133, 146–47 (2011).

[48]Pagano & Volpin, *supra* note 31, at 423, 424.

but pay for rating only if they request publication,[49] more competition between CRAs tends to result in more rating inflation.[50] In fact, unless rating shopping is banned altogether, having more CRAs in the markets improves the ability of issuers to cherry-pick the rating they prefer. To be sure, rating shopping could be prohibited, for example, by requiring issuers to pay for ratings prior to their publication[51] and CRAs to also disclose unfavorable ratings. This solution may not solve the problem of implicit rating shopping, though, as issuers could learn the CRAs' assessment informally before entering into a contract with them.[52] At the same time, forcing issuers to pay for ratings without knowing their contents may generate moral hazard. If CRAs can save on their costs after having secured an income independent of their assessment, eventually this could lead to the collapse of the market for ratings.[53]

There is an additional, yet fundamental, problem of the market for rating. Unlike other gatekeepers, CRAs produce forward-looking judgments. As predictions about the future are inherently imperfect, demanding absolute accuracy from CRAs is unreasonable.[54] Any regulation of the market for rating should take into account the fact that perfect predictability is a chimera.

The lesson learned from the legal and the economic literature is that a combination of market failures and regulatory distortions probably affect the market for ratings. Ratings tend to be inflated because there

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[49]This article does not address unsolicited ratings, which typically concern sovereign issuers.

[50]Bo Becker & Todd Milbourn, *How Did Increased Competition Affect Credit Ratings?*, 101 J. Fin. Econ. 493, 493 (2011) (finding empirical evidence that increased competition lowers rating quality).

[51]This is the essence of the so-called Cuomo Plan, named after the former New York State Attorney General who proposed this approach. This approach does not eliminate rating shopping in the absence of an explicit obligation to disclose also unfavorable ratings. Bolton et al., *supra* note 18, at 89.

[52]Francesco Sangiorgi et al., Credit-Rating Shopping, Selection and the Equilibrium Structure of Ratings, (June 8, 2009) (unpublished manuscript), *available at* http://finance.sauder.ubc.ca/conferences/summer2009/files/papers/ChesterSpatt.pdf; Pagano & Volpin, *supra* note 31, at 406.

[53]Bolton et al., *supra* note 18, at 106.

[54]In the economic literature, the signal received by the CRA is always imperfect, thus acknowledging that predictions cannot be perfect. *E.g.*, *id*. at 96.

are naïve investors, which make reputation a weak constraint on rating shopping *and* because there are regulatory benefits, which allow CRAs to cater to the investors' demand for artificially high ratings. Moreover, there is no easy way in which the market or regulation can overcome these problems. If the marginal investors are naïve, the market cannot easily self-correct. Regulation could paternalistically protect naïve investors by prohibiting the issuer-pays model, rating shopping, or even both of them. However, this approach would hardly be effective. On the one hand, in the absence of a regulator or a court that can screen rating quality, a market for ratings deprived of its typical features may collapse because of free riding,[55] or moral hazard.[56] On the other hand, so long as financial regulation lacks viable alternatives to ratings for assessing credit risk, ratings will still be inflated despite any prohibition of issuer-pays and/or rating shopping when the regulatory benefits from inflation are high enough.

II. Strict Liability for Rating Agencies

In this part, we introduce our main idea. First, we use a numerical example to show that under strong simplifying assumptions our strict liability rules deter rating inflation. Second, we explain how to prevent overdeterrence under more realistic assumptions.

A. A Numerical Example

While the problem of rating inflation is almost universally recognized in the legal and economic literature,[57] no workable policy has been identified, whether radical or incremental, that could alter the market incentives in such a way as to eliminate rating inflation. However, the problem is, in principle, a simple one to solve. CRAs should earn

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[55]Pagano & Volpin, *supra* note 31, at 405.

[56]Bolton et al., *supra* note 18, at 106.

[57]One important exception is the work from Professors Gorton and Ordonez citing, inter alia, the study by Park. This study, however, does not deny that the triple-A subprime-related securities turned out to be riskier than implied by their initial rating. Rather, their point is that few of these securities actually defaulted and that the losses stemming from such defaults were quantitatively small (too small to justify a global financial crisis). *See* Gary Gorton & Guillermo Ordoñez, *Collateral Crises*, 104 Am. Econ. Rev. 343, 343 (2014); Sun Young Park, *The Size of the Subprime Shock* (2011) (unpublished manuscript).

market profits from issuing accurate ratings but incur punishment if they produce inflated ratings. To achieve this goal, we propose the introduction of a simple and legally workable strict liability rule. Specifically, CRAs should pay damages whenever a bond or a company they rate defaults.

One intuitive problem with this approach is that the amount of damages that CRAs would expect to pay might be too high for the production of ratings to remain viable.[58] Because the default of a sufficiently large issuer could bankrupt any CRA, an uncapped liability rule may push all CRAs out of the market. For this reason, we identify a damage cap based on objective factors that discourages rating inflation, while preventing crushing liability. More precisely, we argue for a damage compensation cap based on the income from ratings divided by the highest probability of default associated with the letter grade of the defaulted asset. This condition is sufficient to disallow profits from rating inflation without discouraging ratings altogether. In other words, CRAs facing this strict liability have no loss conditional on the absence of rating inflation as revealed by the difference between the predicted default rate and the actual frequency of defaults.

Let us try to illustrate our approach with a numerical example. Assume there are 100 firms, each one pays $\gamma = 1$ to the CRA for rating, and the cost of rating is zero. Let us also assume that the probability of default (Pr) is equal to 0.01 for all the firms and that Pr is known by the CRAs. If the rating agency correctly estimates the financial stability of the 100 firms, it will include all of them in the same cluster having—we assume—$Pr = 0.01$ as the upper bound. When only one firm effectively goes bankrupt, the rating agency will be held liable for $\gamma * 1/Pr = 100$ and will thus make zero profits. It is worth noting that the liability of the CRA is set to 100 independent of the damages stemming from bankruptcy, which could be much higher. However, if the rating agency systematically underestimates the probability of default (that is, it inflates the rating), it will bear higher losses. For example, let us assume that all the firms are included in a higher cluster than their creditworthiness would grant, with an assigned probability of $Pr = 0.005$. In this case, if still only one firm goes bankrupt, the liability will be equal to 200, imposing on the CRA a loss of 100.

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[58]Coffee, *supra* note 3, at 253.

Let us now contrast the above example with the opposite case, in which the CRA overestimates the probability of default. Specifically, assume that the CRA includes all the firms in a cluster with an assigned probability of $Pr = 0.02$. This is an example of rating deflation. Deflated ratings are less interesting for issuers, which know that their real *Pr* is 0.01. Still, such ratings could be useful to sell securities to investors who believe that the real *Pr* is even lower. As a result, because some firms will not be interested in buying deflated ratings, CRAs' income will be lower than 100 but higher than zero. Now, to keep the example simple, let us assume that the one firm that effectively defaults is one of those purchasing the deflated rating. This implies that the CRAs will face a liability equal to 50. Under these circumstances, the CRA can profit from rating deflation only if less than 50 firms drop out of the market.

This example shows that CRAs issuing accurate ratings will make zero profit. Conversely, profits will always be negative if ratings are inflated. Rating deflation will likewise be unprofitable so long as a sufficient number of firms stop purchasing ratings that underestimate their creditworthiness. Interestingly, the example also shows that our rule does not allow CRAs to escape liability simply by deflating ratings.

It is important to contrast this outcome with the negligence liability regime introduced by the Dodd-Frank Act.[59] Regardless of liability, rating deflation reduces the income of CRAs because fewer issuers are interested in deflated ratings. However, this might not be sufficient to discourage rating deflation when issuing overly pessimistic ratings significantly reduces CRAs' expected liability. Under the Dodd-Frank Act, rating deflation is enough to bring CRAs' expected liability to zero, because a due diligence standard is met by sufficiently conservative ratings. As implied by recent empirical evidence, at times this drop in expected liability more than compensates the loss of business associated with rating deflation, thus inducing CRAs to engage in defensive conduct.[60] We improve on this outcome because, under our rule, deflating ratings only reduces expected liability instead of shielding CRAs from liability altogether. Going back to our numerical example, even if the

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[59]*See supra* notes 5, 11 and accompanying text.

[60]Dimitrov et al., *supra* note 8, at 509.

CRA decides to engage in rating deflation, it will still face a liability of 50.

Notably, it is hard to imagine that issuers will be interested in buying strongly deflated ratings. Therefore, given how damages are calculated under our rule, the reduction in expected liability associated to rating deflation will generally be very small and might not be enough to compensate for the possible loss of business. In other words, different from the Dodd-Frank Act, our rule also supports liability when ratings are lower than warranted, and hence it copes better with the problem of asymmetric sanctions than the status quo.[61]

The damage compensation calculated according to this formula aims exclusively to deter rating inaccuracy. Consequently, who collects the damages is of secondary importance. For example, the sum could be awarded to the investors in proportion to the losses effectively suffered from the default. Alternatively, to prevent the risk of opportunistic behavior, the payment exacted from the CRA could take the form of a fine collected by a public authority.

For purpose of exposition, this example has been extremely simplified. We have assumed that CRAs have perfect foresight, that the production of ratings is viable with zero profits, and that no reputational sanction is attached to rating inflation. We will show the consequences of relaxing all of these assumptions in the formal presentation of our strict liability rule in Part III. But before moving on to this, we are going to discuss in more detail why strict liability is preferred to negligence, why the former does not overdeter the production of ratings, and which corrections are needed in order for this result hold true.

B. Why a (Modified) Strict Liability Regime Does Not Lead to Overdeterrence

Strict liability for rating agencies is different from the approach taken by major jurisdictions in the aftermath of the global financial crisis. As we mentioned, in the United States, in the European Union, and in Australia, CRAs' exposure to liability has been increased but always based on negligence.[62] However, negligence rules in this context

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[61] *See supra* notes 10–15 and accompanying text.

[62] In the United States, the exemption of CRAs from liability as experts pursuant to section 11 of the Securities Act of 1933 was removed in 2010. Dodd-Frank Act, *supra* note 5, §

present a twofold problem. On the one hand, it is hard for courts to set the due care level correctly.[63] On the other hand, courts face difficulties in assessing *ex post* whether the CRA took due care in the formulation of the rating.[64] As nicely put by Professor Jack Coffee: "Strict liability spares both courts and regulators the need to descend into the Serbonian bog of defining precise standards of care, thereby reducing transaction costs and increasing predictability."[65]

Moreover, when courts' behavior is uncertain, injurers generally engage in inefficient defensive conducts,[66] especially when their conduct is heavily debated among policy makers and in the media. In other words, injurers will take precautions to protect themselves from liability, not because it is efficient to do so.[67] Not surprisingly, the findings of the empirical literature show that the introduction in U.S. law of negligence liability for CRAs has resulted in defensive practices instead of improv-

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939G,. As a result, CRAs are currently subject to liability under a due diligence standard provided that they are named as experts in the prospectus, which they can and do refuse to do particularly in the case of structured finance. *See supra* note 23; Coffee, *supra* note 3, at 265. On this side of the Atlantic, an EU-wide liability of CRAs was only introduced in 2013. "Where a credit rating agency has committed, intentionally or with gross negligence, any of the infringements listed in Annex III having an impact on a credit rating, an investor or issuer may claim damages from that credit rating agency for damage caused to it due to that infringement" (art. 35a, 1, Reg. (EC) no. 1060/2009, as amended by art. 1, (22), Reg. (EU) no. 462/2013). For Australia, see ABN AMRO Bank NV v Bathurst Regional Council [2014] FCAFC 65, discussed *supra* note 6.

[63]*See* Coffee, *supra* note 21, at 347.

[64]When courts cannot observe *ex post* the behavior of an injurer (in this case the CRA), the level of precautions adopted will systematically be inefficient. Steven Shavell, *Strict Liability Versus Negligence*, 9 J. Legal Stud. 1, 22–23 (1980).

[65]Coffee, *supra* note 21, at 347. *See also* Assaf Hamdani, *Gatekeeper Liability*, 77 S. Cal. L. Rev. 53, 59 (2003) (although acknowledging this point, the author argues that strict liability might be excessive).

[66]For a pioneering work on this problem, see Richard Craswell, & John E. Calfee, *Deterrence and Uncertain Legal Standards*, 2 J.L. Econ. & Org. 279, 299 (1986) ("Our analysis shows that if the uncertainty created by the legal system is distributed normally about the optimal level of compliance, and if the uncertainty is not too large-two seemingly plausible assumptions-then the result under normal damage rules will be too much deterrence rather than too little.").

[67]This potential problem has long been recognized by the legal literature. *See, e.g.*, Coffee, *supra* note 21, at 306.

ing rating accuracy.[68] As noted by Professor Coffee, defensive conduct is a relevant disadvantage of a negligence rule over a strict liability rule, as the latter automatically make any defensive conduct irrational.[69]

Acknowledging the difficulty with policing the incentives of CRAs through a negligence standard for tort liability, Professor Yair Listokin has suggested imposing a punishment on CRAs that produce inaccurate ratings by paying them with the debt they rate.[70] We follow a similar logic, although we are more optimistic about the possibility to implement this logic through liability. Using liability to pursue this strategy has the important advantage of allowing corrections for systemic risk, which are obviously not available for debt. Therefore, different from the rest of the literature, we design a complete strict liability regime supporting the production of accurate ratings—as accurate as allowed by the available forecasting technology—without undermining the existence and the functioning of a market for ratings.

Choosing a strict liability rule poses, however, the following three challenges. First, unlimited strict liability for the default of any rated asset would be unsustainable for CRAs and drive them out of business. Second, even if limited, strict liability would expose CRAs to systemic risk regardless of the accuracy of their predictions. Third, because ratings are only as accurate as the available forecasting technology allows, strict liability exposes CRAs to mistakes that they cannot avoid. Despite these problems, we still argue that CRAs should face liability regardless of their diligence. However, we design a strict liability regime with three limitations in order to address each of these problems. First, damage compensation is capped at a nonarbitrary multiplier of the CRA's income. Second, CRAs are shielded effectively from systemic risk. Third, at least in the absence of regulatory benefits, CRAs can account for the limitations of their forecasting models by choosing a certain degree of liability exposure.

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[68]Dimitrov et al., *supra* note 8, at 518. *See* also *supra* notes 10–15 and accompanying text.

[69]Coffee, *supra* note 21, at 306 ("[T]he auditor would know that it sinks or swims with its client; hence, half-hearted or pro forma monitoring, which may be a rational strategy under a negligence or fault-based legal regime, no longer protects the gatekeeper.").

[70]Listokin & Taibleson, *supra* note 20, at 104–10.

The idea of strict liability for gatekeepers is not new, although so far it has not been explicitly extended to CRAs.[71] Importantly, taking into account that the gatekeepers' income is very small relative to the investors' losses from underperforming financial assets, these proposals have tried to limit gatekeepers' liability on the grounds that a full liability exposure would deter gatekeeping altogether. This is especially true in the case of rating agencies.[72] This problem is germane to that of crushing liability described by Professors Shavell and Ben-Shahar among others.[73] Crushing liability deters a socially valuable activity, like the production of accurate ratings, by imposing on the actor subject to it a liability in excess to the harm that it causes to the society. We argue that strict liability without appropriate limitations would be crushing for CRAs, because their liability would exceed their revenues from selling ratings that are as accurate as possible, given the limits of the existing forecasting models including most prominently—but not only—systemic risk. As mentioned, imposing strict liability on rating agencies creates three different problems. Let us discuss them in turn.

Starting from the damages, CRAs—like other gatekeepers—cannot face liability for losses significantly larger than the value of their business.[74] Making CRAs pay damages equal to the investors' losses from the default of a large rated company obviously is unreasonable. Because most of these losses would have also occurred in the absence of rating, the expected liability of CRAs could not be offset by higher fees. Hence, facing such a liability exposure, CRAs would refrain from producing ratings in the first place. Fortunately, it is not necessary to make CRAs liable for the full amount of investors' losses in order for

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[71]*See* Frank Partnoy, *Barbarians at the Gatekeepers? A Proposal for a Modified Strict Liability Regime*, 79 Wash. U. L.Q. 491, 540 (2001) (proposing gatekeeper strict liability as an alternative to a due-diligence regime); Coffee, *supra* note 21, at 309. *But see* Partnoy, *supra* note 5, at 96 (mentioning in passing that a modified strict liability regime could be applied to CRAs too).

[72]Coffee, *supra* note 3, at 253 (noting that the danger of overdeterrence in absence of a damage cap "is especially acute in the case of a CRA, because its mistakes are typically interlinked and involve multiple securities issuances").

[73]Steven Shavell, *Strict Liability Versus Negligence*, 9 J. Leg. Stud. 1, 1 (1980); Omri Ben-Shahar, *Causation and Foreseeability*, *in* Tort Law and Economics 83–108 (Michael Faure ed., 2009).

[74]Coffee, *supra* note 3, at 253.

them to have incentives to produce accurate ratings. As suggested by Professor Coffee for other gatekeepers, it is sufficient to cap the liability at a multiple of their fee income.[75] The problem with this and other similar approaches is the arbitrariness of the multiplier.[76] As the previous numerical example illustrates, we are able to overcome this arbitrariness in the design of gatekeepers' liability. To our knowledge, we are the first to identify an income multiplier based exclusively on objective factors.

More precisely, the characteristics of the market for ratings offer the unique opportunity to determine an objective measure of damages leading to optimal deterrence. The main task performed by rating agencies is to classify and divide companies in clusters according to their probability of default.[77] If the liability is calculated by multiplying the price paid by the issuer times the inverse of the highest probability of default associated with the cluster in which the issuer is included, the liability of the rating agency will depend directly on the extent of rating inflation. By imposing such liability every time a rated bond defaults, our rule not only discourages rating inflation, but also addresses the problem of asymmetric sanctions stemming from the design of CRAs' liability under the Dodd-Frank Act.[78] In fact, under the Dodd-Frank Act, CRAs face asymmetric sanctions because they are exposed to liability if they inflate ratings, whereas no claim will ever be brought against overly pessimistic ratings.[79] Yet, a correct functioning of financial markets requires accurate ratings, not overly pessimistic, and hence rating deflation should also be punished whenever that is a matter of concern, like in the case of corporate

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[75]Coffee, *supra* note 21, at 363.

[76]Brigitte Haar, *Civil Liability of Credit Rating Agencies After CRA 3-Regulatory All-or-Nothing Approaches between Immunity and Over-Deterrence* (2013) (unpublished manuscript), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2198293.

[77]Part III.C extends the reasoning to a slightly more detailed discussion of the activity performed by rating agencies.

[78]*See supra* note 10–15 and accompanying text.

[79]Goel & Thakor, *supra* note 10. Another way to put it is that there is a cliff, or at least a very quick decline, in CRAs expected liability when moving towards rating deflation. Therefore, at the margin rating deflation generates great benefits in terms of reduced liability. Our rule allows eliminating this cliff thus reducing the benefits of rating deflation for the CRA.

bonds.[80] As shown by the numerical example, our rule still imposes a liability significantly different from zero on the CRAs that produce deflated ratings.[81]

Importantly, while we argue that rating deflation ought to be sanctioned, it should be punished *less* than rating inflation. The reason is twofold. First, rating deflation is already constrained by the fact that issuers want high ratings, while this constraint obviously does not apply to rating inflation. Second, rating deflation harms financial markets—which are extensively regulated—less than rating inflation. While both reduce ratings' informative contents, only ratings inflation grants unwarranted regulatory benefits. Therefore, the sanction for rating deflation should be positive, yet smaller than the sanction for rating inflation. This is exactly what our rule does. The liability of CRAs increases with the level of rating inflation but also remains positive when the ratings are deflated.

The second problem with the imposition of strict liability on CRAs is the resulting exposure to systemic risk. The main characteristic of rating agencies is the probabilistic nature of their predictions. To rate a company triple-A is not equal to categorically excluding the possibility of its default; it merely implies a very small probability that default will happen. The logic behind the introduction of a strict liability rule to govern an activity generating losses with a certain probability is that the producer is assumed to be in the best position to insure (or self-insure) against the losses and to raise prices accordingly.[82] This is not necessarily true for CRAs. While it is possible to insure only against uncorrelated risks,[83] the global financial crisis has shown that, especially in the medium to long term, defaults of firms and financial assets can be significantly correlated. For the purpose of this article, we call these correlations systemic risk.[84] Without an appropriate correction, CRAs would

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[80]As already mentioned, the case of structured finance bonds is different. *See infra* t notes 137–39 and accompanying text.

[81]*See supra* notes 59–61 and accompanying text.

[82]*See* George L. Priest, *The Current Insurance Crisis and Modern Tort Law*, 96 Yale L.J. 1521, 1534–35 (1987).

[83]*Id*. at 1540.

[84]Systemic risk is not easy to define, and it is even more difficult to measure. *See* NBER, Risk Topography—Systemic Risk and Macro Modelling (Markus Brunnermeier & Arvind

act as de facto insurers against risks that are correlated among each other. It follows that unless CRAs are adequately shielded from correlated defaults (i.e., systemic risk) a strict liability rule is unworkable. Differently from the rest of the literature, we develop a framework to prevent CRAs' liability from being affected by systemic risk.

We suggest two different approaches for corporate bonds and for structured finance products because they have a very different exposure to systemic risk.[85] We note that corporate defaults tend to be strongly correlated only in the medium to long term.[86] Therefore, as far as corporate bonds are concerned, we argue that liability should operate only for a limited period after the production or the confirmation of a rating. Although this is sufficient for corporate bonds, the defaults of structured finance products also tend to be correlated in the short term, particularly in a financial crisis.[87] Because, in this situation, strict liability may discourage CRAs from rating structured finance altogether,[88] we propose another solution to cope with systemic risk.[89] Whenever extraordinary default rates are arguably dependent on systemic risk, liability should be conditional on inaccuracy being confirmed by the law of large numbers. When a public authority announces a financial crisis status, liability should be imposed on CRAs only if the frequency of observed defaults departed from the predictions made by CRAs over a sufficiently large number of cases and a sufficiently long time span (for instance, five years). This solution should protect CRAs from violent short-term

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Krishnamurthy eds., 2014) (presenting the results of a recent collective study). However, for purposes of this article, we focus on "economic catastrophes," in which defaults occur across otherwise uncorrelated financial claims, as systemic risk events. *See generally* Joshua Coval et al., *Economic Catastrophe Bonds*, 99 Am. Econ. Rev. 628, 628 (2009). Bonds that default only in the worst possible state of the economy are greatly exposed to systematic risk although they are safe in all the other (more likely) states of the world. Because ratings are silent about the state of the world on which defaults occur, they are informative about systemic risk and should not be exposed to it. Coval et al., *supra* note 16, at 23.

[85]Coval et al., *supra* note 16, at 23.

[86]*See* Part IV.A (presenting empirical evidence on this point).

[87]Coval et al., *supra* note 16, at 23.

[88]CRAs going on "strike" and refusing to rate securitizations until liability under section 11 of the Securities Act could be avoided suggests that this might be actually the case. *See supra* note 23 and accompanying text.

[89]*See infra* notes 137–139 and accompanying text.

fluctuations in the default rates. Besides limiting the extent to which strict liability overdeters the rating of structured finance products, this solution rewards the CRAs that were more conservative in their assessments during the upswing phase of an asset bubble.

These two solutions also have different implications in terms of incentives to deflate ratings. More precisely, as shown above, the solution adopted for corporate bonds punishes rating deflation, albeit less than rating inflation. On the contrary, our approach to CRAs' liability for structured finance products *rewards* CRAs that deflate ratings during economic booms and, as such, it is intentionally countercyclical. This difference reflects "the divergence of rating behavior between the bond and structured product markets: structured product ratings becoming more lax, bond ratings becoming more conservative."[90] In other words, there is empirical evidence suggesting that rating deflation is a problem affecting the rating of corporate bonds,[91] whereas the rating of structured finance bonds is biased toward rating inflation, and the bias is procyclical (i.e., it is stronger in economic booms).[92] This is an important reason to adopt two different strategies to cope with systemic risk when dealing with corporate and structured finance products.

A third and final limitation of strict liability stems from the observation that CRAs cannot predict default rates without errors. Because we do not live in a world of perfect foresight, it is illusory for the law to police incentives exclusively based on expected values and the underlying

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[90]Matthew Rablen, *Divergence in Credit Ratings*, 10 Fin. Research Letters 12, 12 (2013).

[91]*See* Marshall E. Blume et al., *The Declining Credit Quality of US Corporate Debt: Myth or Reality*, 53 J. Fin. 1389, 1396 (1998) (showing that bond ratings became increasingly conservative over the period 1978–1995); Ramin P. Baghai et al., *Have Rating Agencies Become More Conservative? Implications for Capital Structure and Debt Pricing*, 69 J. Fin. 1961, 1962 (2014) (showing that the trend to issue more conservative corporate ratings continued until 2009).

[92]*See* e.g. Adam B. Ashcraft et al., *MBS Ratings and the Mortgage Credit Boom* (Fed. Reserve Bank of N.Y., Working Paper No. 449, 2010) *available at* http://www.econstor.eu/bitstream/10419/60795/1/635889943.pdf. *See also* Heski Bar-Isaac & Joel Shapiro, R*atings Quality over the Business Cycle*, 108 J. Fin. Econ. 62, 63 (2013) ("The idea that ratings quality may be countercyclical is consistent with recent empirical work on the market for structured finance products. As a relatively new market for hard-to-evaluate investments, the structured finance market opened up the possibility for accuracy and reputation management by CRAs.").

probabilities.[93] Our ability to predict the future is limited; so is CRAs' ability to commit to their predictions. Imposing on CRAs a strict liability rigidly dependent on the probabilities they estimate may discourage them from producing ratings in the first place. Departing from previous scholarship, we argue that a contractual solution can cope with this problem by inducing market players to reveal information efficiently.

We allow CRAs to reduce their liability exposure by introducing a contractually determined parameter α, which is supposed to account for the uncertainty of the forecasting technology. The parameter α is a quantity ranging from one (full exposure to strict liability) to zero (no liability at all) that CRAs communicate to the market when issuing a rating. The default value of α is one. By determining the value of α, CRAs are allowed to decide how much to commit to a certain rating, that is, to the probabilities of default and the other estimates associated with each letter grade they publish as rating. Therefore, through this parameter, the CRAs can prevent crushing liability stemming from the uncertainty of their models, while signaling to the market the degree of confidence in their own estimates. The limited ability to foresee the future, along with the unobservability of several variables affecting the performance of the market for rating, is the reason why we ultimately advocate a contractual approach to CRAs' liability.

One may doubt whether allowing CRAs such freedom of choice can lead us anywhere. On the one hand, in the absence of sufficient competition in the market, the CRAs might converge to a suboptimal equilibrium where α is too low or even zero. On the other hand, nothing has prevented CRAs from introducing this or similar commitment devices in their contracting with issuers, and indirectly with investors; but they have never done so. To the contrary, CRAs have always opposed any form of liability stemming from the publication of their ratings. Therefore, one obvious question is why CRAs would ever choose a value of α different from zero. Let us discuss each of these objections in turn.

First, competition in the market for ratings exists and is one of the drivers of rating inflation.[94] After all, competition and rating shopping

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[93]*See generally* Alessio M. Pacces, The Future in Law and Finance (2013) (applying this argument to the regulation of banking and corporate governance).

[94]Bar-Isaac & Shapiro, *supra* note 92, at 69 ("[W]hile S&P, Moody's, and Fitch certainly exercise some market power, they also compete for market share.").

are two sides of the same coin. In the absence of the former, the latter would not exist. Theoretical studies have laid the foundations of this argument,[95] while empirical studies have shown that increasing competition leads CRAs to inflate their ratings, arguably because of rating shopping.[96] Thus, although CRAs are competing,[97] in the absence of legal intervention, their competition tends to result in inflated ratings. By introducing our strict liability rule, we try to preserve the competitive features of the market for rating. However, as we explain in Part V,[98] we try to induce CRAs to compete on the value of α, instead of competing on the level of ratings they produce.

Secondly, there are two reasons why a solution similar to the one advocated in this article would not emerge from the market. For one, collective action problems likely prevent such a regime from being opted into by CRAs. Apart from the obvious transaction costs of designing it—including the uncertainties in the enforcement of a privately designed regime[99]—individual CRAs are reluctant to enter into liability unless this allows them to charge higher fees without losing customers.[100] However, this is possible only if the other CRAs follow suit. As each individual CRA may continue to charge lower fees, stay away from liability, and make profits so long as investors do not realize how liability contributes to more accurate ratings, nobody is going to move first. A default rule like the one we are proposing (where α is equal to one) can

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[95]*See* Bolton et al., *supra* note 18, at 86.

[96]Becker & Milbourn, *supra* note 50, at 493 (showing that an increased competitive threat by Fitch worsened ratings quality).

[97]*See* Bar-Isaac & Shapiro, *supra* note 92, at 69.

[98]*See* text following *infra* note 148.

[99]This argument has been deployed to justify statutory menus, particularly in corporate law. *See* Michael Klausner, *The Contractarian Theory of Corporate Law: A Generation Later*, 31 J. Corp. L. 779, 793 (2005) (explaining how the provision of off-the-rack solutions creates important network effects); Luca Enriques, Ronald J. Gilson & Alessio M. Pacces, *The Case for an Unbiased Takeover Law (with an Application to the European Union)*, 4 Harv. Bus. L. Rev. 85, 105–06 (2014) (arguing for the statutory provision of menu rules in takeover law).

[100]This is a consequence of price rigidity in oligopoly, which is in turn the market structure wherein CRAs operate. Price rigidity is a well-known characteristic of oligopolistic markets. *See* Paul M. Sweezy, *Demand Under Conditions of Oligopoly*, 47 J. Pol. Econ. 568, 569–72. (1939).

overcome this problem.[101] It is easier for CRAs to opt out of excessive liability, which may drive them out of business, than to opt in to the optimal degree of liability, which depends on something unobservable, namely, the quality of the forecasting technology available to each CRA.

A second reason why CRAs would not choose a limited strict liability regime spontaneously is that, if investors want to buy securities with high ratings regardless of whether they are accurate, CRAs cannot profit from committing to higher accuracy. Indeed, the contractual approach to liability that we advocate does not solve the problem of rating inflation whenever this is precisely what investors want. This is typically the case when there are benefits, directly or indirectly supported by regulation, from reliance on high ratings.[102] In the presence of such regulatory benefits, not only will CRAs never consider introducing a commitment to more accurate ratings. They will also opt out of such commitment if that is set as default rule, as our strict liability regime effectively does. In other words, CRAs will choose an inefficiently low α (possibly zero) and profit from providing regulated investors with artificially high ratings.[103] To address this issue, regulation should require that CRAs face a minimum degree of liability exposure in order for their rating to enable legal benefits of any sort. This solution would still allow CRAs to freely choose their commitment levels with investors, but only if ratings have no legal value. The rationale for limiting freedom of contract in this fashion is that, whenever ratings have legal value, inflated ratings create negative externalities on the society, of which the global financial crisis is but one recent example.

In concluding this part, it is worth repeating that the liability rule we have designed implies a damage compensation that is in no way related to the harm that investors have suffered.[104] However, given that it is

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[101]For how default (and menu) rules can solve this and several other coordination problems, see generally Ian Ayres, *Regulating Opt-Out: An Economic Theory of Altering Rules*, 121 Yale L. J. 2032 (2012).

[102]*See* Opp et al., *supra* note 39, at 47. For more details on the legal and behavioral advantages of relying on ratings, see Frank Partnoy, *Historical Perspectives on the Financial Crisis: Ivar Krueger, the Credit-Rating Agencies, and Two Theories About the Function, and Dysfunction, of Markets*, 26 Yale J. on Reg. 431, 438–43 (2009).

[103]Opp et al., *supra* note 39, at 47.

[104]*See supra* 61–62 and accompanying text.

nearly impossible to prove CRAs' negligent behavior and the portion of the harm suffered by the investors that is attributable to their conduct, it is hard to determine how much harm rating agencies effectively cause to the market by producing inaccurate ratings. Therefore, we follow Professor Coffee and develop a liability regime that prioritizes deterrence over compensation concerns.[105] If deterrence is the only goal of the liability rule, who collects the compensation is a problem of secondary importance, and we abstain from further commenting on it.

III. A Formal Description of CRAs' Incentives

In this part, we illustrate how the introduction of our strict liability rule affects the incentives of CRAs to inflate ratings. We take a step forward from our numerical example and describe the behavior of CRAs by simple, but generalizable, equations. We start from an ideal situation, where the market is providing CRAs with incentives to produce accurate ratings, in order to show how market failures result in rating inaccuracy. Then we introduce our strict liability rule. We show how this rule improves the market outcome first under a set of simplifying assumptions. Subsequently, we remove these assumptions to show that this result holds true, even when we take the complexity of the real world into account.

Let us define δ_j as a measure of rating inflation (or deflation). With regard to the *jth* cluster of creditworthiness, δ_j is defined as

$$\delta_j = \frac{m_j - s_j}{m_j} - Pr_j \tag{1}$$

where the index j varies on the whole set of rating classes, m is the number of firms included by the *nth* CRA in the *jth* class of rating, s_j represents the number of firms included in the *jth* cluster that did not go bankrupt, and Pr_j indicates the default rate for the letter grade associated to the *jth* cluster. In other words, $(m_j - s_j)/m_j$ denotes the *ex post* probability of default, whereas Pr_j indicates the *ex ante* prediction. Consequently, if CRAs predictions are confirmed *ex post,*

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[105]Coffe, *supra* note 3, at 252–53.

$$\frac{m_j - s_j}{m_j} = Pr_j; \quad \delta_j = 0 \tag{2}$$

Conversely, we formally define rating inflation as

$$\frac{m_j - s_j}{m_j} > Pr_j; \ \delta_j > 0 \tag{3}$$

The overall level of rating inflation (or deflation) of the *nth* CRA is defined as

$$\bar{\delta} = \sum_j \delta_j \tag{4}$$

We then introduce the parameter β that denotes the difference between the rating assigned to the *ith* firm by the *nth* CRA and the rating potentially assigned to the *ith* firm by another CRA. Hence, β measures the level of rating inflation of the *nth* CRA relative to its competitors.

In a perfect market we will assume that the profits of the *nth* CRA are described by the following equation:

$$\Pi_{n,j} = \sum_j \sum_{i=1}^{m_j} \gamma_{i,j} + R\left(\beta, \bar{\delta}\right) \tag{5}$$

$\gamma_{i,j}$ is the fee collected from each firm net of given rating costs while $R\left(\beta, \bar{\delta}\right)$ is the reputational effect of CRA's conduct.[106] $R\left(\beta, \bar{\delta}\right)$ captures the impact of this conduct on future income. For simplicity, we assume a discount factor equal to 1. The reputational effect then depends on the two parameters defined above, namely β and $\bar{\delta}$.

In a perfect market, investors will be able to detect any mistake in a CRA's predictions and to punish it with a reputational sanction sufficient to make such mistakes unprofitable.[107] In addition, because we are assuming that no market failure exists, there are no regulatory benefits from investing in rated assets. In other words, in a perfect market characterized by perfect foresight, no rating inflation could exist because reputational sanctions are sufficient to prevent opportunistic behavior,

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[106]For the sake of simplicity, we assume that CRAs only compete on the number of rated firm, not on the level of the fees. This assumption is without loss of generality, as our results would hold also for variable fees.

[107]*See* Macey, *supra* 34, at 1500.

regardless of the paying scheme and the liability rule adopted. It follows that in this scenario, no liability should be imposed on CRAs.[108] We are simply restating the influential reputational capital theory. In the absence of market failures, there is no need to discipline CRAs' behavior because issuing accurate predictions is necessary to preserve their reputation.[109]

We then consider the impact of two market failures, namely, the existence of regulatory benefits attached to high ratings[110] and the naivety of some investors.[111] While we are agnostic about the exact impact of each factor, the findings of the literature suggest that both functions m and $R\left(\beta, \bar{\delta}\right)$ change their shape and their behavior because of them.[112] In this case, the regulator confers an independent value upon high ratings and hence the reputational effect of rating inflation is altered. In other words, because CRAs can de facto sell "regulatory licenses"[113] and some investors are naïve[114] the reputational capital theory breaks down. Because of the existence of regulatory benefits and naïve investors, issuers will be attracted to high ratings regardless of their informative content, and hence m becomes dependent on β and on the size of the regulatory benefits.

Equation (5) thus becomes

$$\Pi_{n,j} = \sum_{j} \sum_{i=1}^{m(\beta)_j} \gamma_{i,j} + R\ \left(\beta, \bar{\delta}, Rb, \theta\right) \tag{6}$$

where Rb denotes the regulatory benefits attached to high ratings and θ indicates the share (in value) of naïve investors, higher values of β and $\bar{\delta}$ result in a higher reputational sanction for the CRA. At the same time, the reputational loss is lower if the value of θ is higher, that is, if there are many naïve investors.

Being extremely simple, this description cannot capture the complex nuances that characterize the functioning of CRAs. However, this

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[108] *Id.*

[109] *See* Choi, *supra* 25, at 961.

[110] Opp et al., *supra* note 39, at 46.

[111] Bolton et al., *supra* note 18, at 85.

[112] *See id.*; Opp et al., *supra* note 39, at 46.

[113] Partnoy, *supra* note 5, at 60.

[114] Bolton et al., *supra* note 18, at 85.

simple framework is sufficient to include the crucial point made by the literature: given the existing market failures and regulatory distortions, CRAs are able to increase their short-term profits by producing inflated ratings.[115] Or, to put it differently, the additional revenues from rating inflation can be larger than the reputational costs to be borne in the future, at least up to a certain level of rating inflation.

Moreover, for individual CRAs, the number of firms to rate depends positively on the level of rating inflation. Because solid firms want to communicate their creditworthiness to the market, some issuers will want to be rated independent of rating inflation. However, another group of issuers will be interested in purchasing a rating *only if* rating inflation is above a certain threshold (for example, allowing them to pass the investment grade threshold, which is typically a condition for investors to enjoy regulatory benefits). Inflating ratings is the only way to attract the issuers of the second group. If this behavior does not sufficiently harm the reputation of the CRA, not only does rating inflation increase short-term profits, but it also becomes necessary to survive in the market for ratings. Because the reputational sanctions are not sufficient to support an equilibrium where $\bar{\delta}=0$, CRAs that do not inflate their ratings will lose customers and short-term profits to their competitors without increasing their future revenues by the same or a higher amount. As a result, all CRAs will inflate ratings to the same extent and the equilibrium will be $\bar{\delta} > 0$ and $\beta=0$.[116]

Introducing the following liability regime can improve this equilibrium.

A. Capped Strict Liability Under Simplifying Assumptions

Under the strict liability rule that we propose, the liability of the *nth* CRA for any firm defaulting in the *jth* cluster will be equal to

$$Ln_j = \sum_{i=1}^{m(\beta,)_j - s_j} \gamma_{i,j}/Pr_j \tag{7}$$

[115] *Id.*

[116] Here, we are assuming that there are no systematic differences among CRAs.

The profits of the *nth* CRA are now equal to

$$\Pi_{n,j}=\sum_{j}\sum_{i=1}^{m(\beta)_j}\gamma_{i,j}\ +R\left(\beta,\bar{\delta},Rb,\theta\right)-\sum_{j}\sum_{i=1}^{m(\beta)_j-s_j}\gamma_{i,j}/Pr_j \tag{8}$$

For the sake of simplicity, let us assume that $R\left(\beta,\bar{\delta},\theta\right)=0$. In other words, for the moment we assume that no reputational sanction is attached to inaccurate ratings.

We obtain the following for the *jth* cluster:

$$\Pi_{n,j}=\sum_{i=1}^{m(\beta)_j}\gamma_{i,j}-\sum_{i=1}^{m(\beta)_j-s_j}\gamma_{i,j}/Pr_j \tag{9}$$

The ratio $\left(m(\beta)_j-s_j\right)/m(\beta)_j$ denotes the share of firms that effectively defaulted. If this ratio is equal to Pr_j, then the CRA has correctly estimated the probability of default of the issuer, and $\Pi_n=0$. In other words, if CRAs have issued accurate predictions, then their profits are equal to zero. If the CRA has underestimated the probability of default, then $\Pi_n<0$. Therefore, whenever a CRA inflates its ratings, it will lose money. Lastly, profits are positive ($\Pi_n>0$) only if $Pr_j>\left(m(\beta)_j-s_j\right)/m(\beta)_j$.

Hence, facing strict liability according to our model, CRAs will never have any incentive to inflate ratings. To the contrary, the optimal strategy for them would be to award always a probability of default equal to one. This extreme case of rating deflation is purely theoretical, because obviously no issuer will ever be interested in purchasing such a rating. Also, because highly rated assets bring about regulatory benefits to regulated investors, issuers will have an interest in receiving a rating that is as high as possible.

Issuers, CRAs, and regulated investors normally have an information advantage compared to regulatory authorities and courts.[117] The question is how to induce the market for ratings to reveal information efficiently. Our strategy is to create, by imposing an appropriate strict liability on CRAs, opposing interests for CRAs, issuers, and investors. More specifically, the CRAs will prefer to supply lower ratings in order to reduce their expected liability, whereas issuers and regulated investors will prefer higher ratings. The ratings produced in such a market

[117]As stated above, this is exactly the reason why ratings were granted regulatory value in the first place. *See* Coffee, *supra* note 3, at 261.

are going to reflect valuable information about the creditworthiness of issuers and their bonds. In fact, this is the only way in which gains from trade can be generated after the profits from rating inflation are disallowed by a capped strict liability rule. This outcome will ultimately benefit financial regulators and the society at large.

In every market, the opposing interests of sellers and buyers lead to an equilibrium price that, in the absence of market failures, is considered optimal.[118] To re-create such equilibrium in the market for ratings, we make sure that issuers and regulated investors, on one side, and CRAs, on the other side, have opposite interests. This also has important dynamic implications. Under the status quo, increasing competition between CRAs would only worsen the problem of rating shopping.[119] This is why competition is not a viable strategy to improve the functioning of the market for rating. Competition could again be valuable in the market for ratings after imposing strict liability on CRAs. In the presence of a capped strict liability regime like the one that we have designed, more actual and potential competition between CRAs can be expected to lead to more innovation in forecasting techniques rather than to more rating inflation.[120]

B. Capped Strict Liability with Imperfect Foresight and Reputational Sanctions

Under our liability rule, four different conditions have to be fulfilled for an efficient market for ratings to emerge: (1) $\Pi = 0$ is considered a satisfying equilibrium; (2) rating agencies know the true probability of default; (3) $R(\beta, \bar{\delta}, Rb, \theta) = 0$; and (4) firms defaults are uncorrelated.

With respect to (1), to use γ as the relevant base for our liability rule implies that the profits of CRAs, given accurate ratings, are set to zero. They become negative only in the presence of rating inflation, which under the assumption of perfect foresight is sufficient to guarantee rating accuracy. The condition $\Pi = 0$ is reminiscent of the absence of economic profits under perfect competition and is not particularly restrictive. As mentioned in the previous section, this equilibrium cannot

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[118] Jean Tirole, The Theory of Industrial Organization 6–7 (1988).

[119] *See* Bolton et al., *supra* note 18, at 86; Becker & Milbourn, *supra* note 50, at 498.

[120] We expand on this point below, in Part V. *See* text following *infra* note 148.

be improved by exaggerating the probability of default (rating deflation) because at some point this will drive the number of rated firms to zero.

More importantly, even under ideal incentives, the CRAs will be prone to making mistakes, violating condition (2). In fact, condition (2) is never true—we do not live in a world of perfect foresight. In addition, the assumption (3)—namely, that R = 0—should be relaxed, too, to account for the effects of reputation and, more in general, all the factors affecting the future income of CRAs. Finally, condition (4) concerns systemic risk as a source of crushing liability. We will deal with this problem separately in Part IV.

To address (2) and (3), we introduce the parameter $0 < \alpha < 1$, which allows limiting the expected liability of CRAs. After the introduction of α, the profit of the *nth* CRA will be equal to

$$\Pi_{n,j} = \sum_{j} \sum_{i=1}^{m(\beta)_j} \gamma_{i,j} + R\left(\beta, \bar{\delta}, Rb, \theta\right) - \sum_{j=D} \sum_{i=1}^{m(\beta)_j - s_j} \gamma_{i,j} * \alpha / Pr_j \qquad (10)$$

where α denotes the fraction of $\gamma_{i,j}$ that is considered to calculate the expected liability. The smaller α, the more mistakes CRAs are allowed to make without suffering losses (and the more economic profits they can make if their ratings are correct). In other words, this scenario lies between two extremes: a perfect market where ratings are efficiently policed by reputational concerns and the stylized market described in Part III.A in which the reputational sanction is equal to zero and rating agencies face liability whenever a rated issuer defaults. In the former case the optimal α (let that be α^*) is equal to zero, in the latter it is equal to one. Because, as shown by the literature on CRAs,[121] the reputational sanction is neither optimal nor is it totally absent, α^* will lie between the two extremes.

Identifying such an optimal value might seem attractive, but we believe that this would be an almost impossible task. A benevolent and omniscient regulator could identify the optimal value of α for any transaction and at any moment in time. However, an omniscient regulator would also know the correct rating for any issuer and financial asset and thus the whole problem of accurate ratings would simply not arise. On the contrary, regulators neither possess unlimited information nor

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[121]Bolton et al., *supra* note 18, at 85; Opp et al., *supra* note 39, at 46.

can they be expected to be always benevolent. It seems extremely difficult that a public authority can manipulate α adequately to guarantee that CRAs earn enough to stay in business without being tempted to inflate their ratings. In order to determine α^*, it would be necessary to know the value of the parameters $\beta, \bar{\delta}, Rb, \theta$, the shape of the functions $R(\beta, \bar{\delta}, Rb, \theta)$ and m, and the level of accuracy of the available forecasting technology.

In more qualitative terms, we argue that the simultaneous presence of regulatory benefits, naïve investors, and imperfect forecasting techniques has affected the market for ratings in a very complex way. In our view, re-creating opposing interests between supply and demand for ratings is a better strategy than attempting to correct the above reasons for market failure via detailed regulations. Therefore, we expressly refuse to make further assumptions on how all these market failures have altered the correct functioning of the market and opt for a solution that relies on market mechanisms to determine α. This allows exploiting market players' knowledge of the parameters determining the size of the reputational sanction $R(\beta, \bar{\delta}\ Rb,\ \theta)$. In any case, when α is high, the CRAs will be more credible because they face higher liability if they inflate their ratings. However, the expected liability may be too high to sustain a market for ratings given the existing forecasting technology. A low α, on the other hand, is good to keep CRAs in business but might be insufficient to cope with the problem of rating inflation.

The alternative to choosing α by regulation is to let α be determined contractually. We take this approach by allowing CRAs to announce to the market (that is, to the investors) how much they are committing to a certain rating with their choice of α. This approach copes with an important shortcoming of imposing strict liability on CRAs. CRAs sometimes state that their predictions are ordinal in nature, not cardinal.[122] The liability rule that we propose requires that all CRAs publish the specific range of probability of default associated with a certain rating and particularly to connect the upper bound of this range to their expected liability. In a sense, this implies forcing CRAs to produce ratings as a cardinal

[122]There is a clear lack of transparency on the real meaning of ratings. *See* Harald Hau et al., *Bank Ratings: What Determines Their Quality?,* 28 *Econ. Pol'y* 289, 292 (2013) (noting that even CRAs themselves sometimes claim that ratings are a cardinal measure, while others that they are ordinal in nature).

measure. Although this increases transparency,[123] it also places a burden on CRAs that they might be unwilling to bear. If the value of α is determined by a regulatory authority, there is the concrete risk that this burden becomes excessive. As we mentioned, regulators are not omniscient. Neither are CRAs. Imposing on CRAs a given α means committing them to a given level of confidence in their own probability estimates. CRAs that find such a level of confidence excessive may simply exit the market.

Conversely, if the rating agencies are allowed to decide how much to "bet" on a certain rating, they can take into account the unavoidable uncertainty surrounding predictions of the future and the possibility of mistakes or imperfection in their models. This solution has a number of advantages. First, it introduces a commitment device to improve the functioning of the market for ratings. This device is a varying degree of liability exposure, which CRAs can choose freely so long as this choice allows them to produce ratings valued by investors. Second, because the CRAs know better than anybody else how accurate their forecasting models are in predicting future defaults, they can choose the level of commitment that is sufficient to keep them in the business, thus preventing strict liability from becoming crushing.

The key feature of α is its contractibility. Being a commitment device supported by an enforceable strict liability rule, α can be enough to keep CRAs in business and high enough to make ratings informative for investors, including the naïve ones.[124] In other words, α allows contracting on unobservable parameters like the determinants of the reputational sanctions and the uncertainty of forecasting models. In the absence of regulatory distortions, competition in the provision of certification services to issuers will always make sure that α is the efficient outcome of the opposing interests of CRAs and investors. Moreover, because CRAs are expected to compete on α,[125] this mechanism also provides incentives to improve the forecasting technology over time. Only the presence of regulatory benefits from high ratings might prevent this approach from leading to an efficient outcome because such

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[123]Calomiris, *supra* note 40, at 3–4.

[124]We assume that no investor is so naïve as to be unable to rank commitments to liability exposure based on $0 < \alpha < 1$.

[125]In Part V, we explain in more detail why this is the case. *See* text following *infra* note 148.

benefits could be so high as to offset all the reputational consequences of rating inflation. When this is the case, the regulatory benefits can also sustain a market for ratings with α artificially low (or even zero).

Therefore, if α is contractually determined, financial regulation cannot allow any rating to have regulatory relevance. More precisely, besides requiring a high rating for investors to enjoy regulatory benefits, regulation should also impose that α chosen by the CRA producing the rating is above a specific threshold. Under such an arrangement, rating agencies would not merely claim that a firm deserves a high rating, but they would have to put their money where their mouths are for credibility. At the same time, by deciding exactly how much to expose themselves to liability, CRAs can prevent the risk that a zealous regulator forces them to carry an excessive burden. It is important to note that CRAs are not forced to adopt any particular value of α. In theory, they could simply decide to shield themselves from any liability claim if that was acceptable for issuers and investors. However, if CRAs want their ratings to have any legal value, they should be the first to show reliance on their own predictions by complying with a minimum value of α established by regulation.

C. Extending the Model: Loss Given Default

In certain cases, especially for corporate bonds, ratings are not only an indicator of the probability of default, but also include an estimate of the loss given default (LGD).

In this section, our model is adapted to take into account the LGD as well as any other quantitative aspect that CRAs might consider in producing a rating. Once again, for the sake of simplicity, we will refer to equation (5), under the assumption of perfect foresight. To take into account the LGD, equation (5) should be modified in the following way:

$$\Pi_{n,j} = \sum_{i=1}^{m(\beta)_j} \gamma_{i,j} - \sum_{i=1}^{m(\beta)_j - s_j} \gamma_{i,j} / P_{rj} * LGD_{ri} / LGD_{p_i} \tag{11}$$

$\mathrm{LGD_r}$ represents the LGD effectively observed whereas $\mathrm{LGD_p}$ represents the predicted LGD. Similar to our previous discussion on the probability of default, if $\mathrm{LGD_r} > \mathrm{LGD_p}$, then the expected profits will decrease. If $\mathrm{LGD_r} = \mathrm{LGD_p}$, the expected profits will not be altered by liability. Lastly, for $\mathrm{LGD_r} < \mathrm{LGD_p}$, Π_n would theoretically increase, but

as we explained for the probability of default, a scenario in which CRAs systematically underestimate creditworthiness is not very realistic because, at some point, issuers will simply stop buying its ratings.

This simple extension shows that our liability rule could be applied, with an identical logic, to any quantitative factor employed by rating agencies for the production of their assessment.

IV. Systemic Risk

To avoid that strict liability becomes crushing, it is necessary to protect CRAs from systemic risk (i.e., for purpose of this article, correlated defaults).[126] Correlated defaults are problematic both because they undermine the *ex post* accuracy of CRAs' estimates and because they are a risk that cannot be insured (or self-insured) by definition.[127] While we account for the fallacies of forecasting models through the choice of α, our strict liability rule still makes CRAs residual risk bearer for the portion of compensation triggered by the default of a rated issuer or bond. Therefore, apart from the uninteresting case in which α is set to zero (or precisely because we want to avoid this outcome), it is important to make sure that CRAs do not face liability when defaults depend on systemic risk rather than on the individual circumstances of the issuer or of the bond that ratings are supposed to assess with a varying degree of precision (α).

Unfortunately, there is no unique way to cope with this problem. As shown by the recent literature, rating structured finance products differs from rating traditional corporate bonds precisely because of their different exposure to systemic risk.[128] As we are going to show, corporate bonds are rather insensitive to fluctuations of economic output in the short term. This offers a straightforward way to deal with systemic risk: the strict liability of CRAs should be limited to the short term. However, structured finance products are very different from corporate bonds in this respect because their defaults can also be highly correlated in the short term.[129]

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[126] *See supra* note 84 and accompanying text.

[127] *See* Priest, *supra* note 82, at 1540.

[128] Coval et al., *supra* note 16, at 23.

[129] *Id*.

To be sure, contrary to traditional corporate bonds whose credit risk mainly depends on firm-specific characteristics, structured finance products behave like economic catastrophe bonds concentrating defaults in the worst states of the economy as a whole.[130] This extreme sensitivity of structured finance to systemic risk is a problem that cannot be ameliorated limiting the CRAs' liability to the short term. Therefore, we reserve this approach exclusively to corporate bonds. As far as structured finance products are concerned, addressing systemic risk requires a modification of our strict liability regime. We present these two approaches in turn.

A. Short-Term Liability for Rating Corporate Bonds

Predictions can be medium-to-long term or short term. We consider three months a typical short-term horizon because this is usually the time frame (the so-called watchlist) in which CRAs review their assessment and decide whether to maintain or downgrade a certain rating.[131]

The rating of corporate bonds mainly depends on the probability that their issuers—typically business enterprises—go bankrupt.[132] While medium-to-long term predictions in this respect seem to be greatly affected by systemic risk, the available data suggests that short-term predictions present this problem in an attenuated form. If the focus is a sufficiently short time horizon, there is no reason to expect that the correlation between business issuers going bankrupt will be significantly positive. This seems to hold true even in times of aggregate economic distress. For instance, the data from the *Quarterly U.S. Business Bankruptcies* show that even during a crisis as violent as the global financial crisis, bankruptcies have taken a certain time to propagate.[133]

Figure 1 illustrates this well. It can be noticed that, although the increase in the frequency of bankruptcies between 2006 and 2009 was significant, the short-term fluctuations were not particularly violent.

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[130] *Id.*

[131] Cristina E. Bannier & Christian W. Hirsch, *The Economic Function of Credit Rating Agencies—What Does the Watchlist Tell Us?*, 34 J. Banking & Fin. 3037, 3037 (2010).

[132] For simplicity, we do not include another important determinant, namely, the loss given default.

[133] Am. Bankr. Inst., Quarterly U.S. Business Filings (1980–Present), *available at* http://abi-org.s3.amazonaws.com/Newsroom/Bankruptcy_Statistics/QUARTERLY-BUSINESS-1980-PRESENT.pdf.

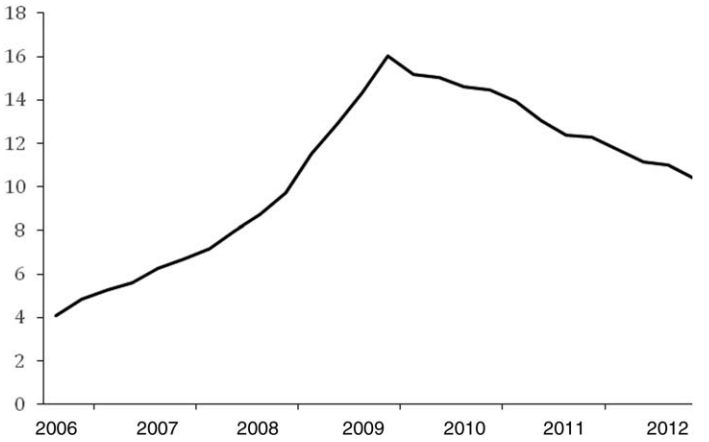

FIGURE 1. Number of Bankruptcies of Business Firms in the United States (in Thousands). *Source*: American Bankruptcy Institute.

The point is illustrated even more clearly by the contrast between Figure 2 and Figure 3. If we look at a period of one calendar year, the percentage change in the number of bankruptcies is dramatic, reaching peaks of forty-four percent and fifty-four percent, respectively, in 2007 and 2008.[134] On the contrary, if we consider a shorter horizon, for instance a quarter, the percentage changes are much smaller. These changes are often below the ten-percent threshold and are never above nineteen percent.[135] Without pretense to discuss thoroughly the impact of systemic crises on bankruptcy rates, we want to emphasize that these data suggest that firm defaults can be indeed correlated; but economic crises, however severe, do not spread instantly across issuers.

Based on this observation, the strict liability faced by CRAs rating corporate bonds should have an expiration date. Rating agencies would be strictly liable only if the issuer goes bankrupt shortly after the rating has been issued or confirmed. If the definition of short-term coincides, as we suggest, with the typical interval in which CRAs review their ratings, CRAs will have the opportunity to revise their ratings when changed circumstances call for a different assessment. If an aggregate shock takes longer than three months to alter the frequency of defaults, CRAs will

[134] *Id.*

[135] *Id.*

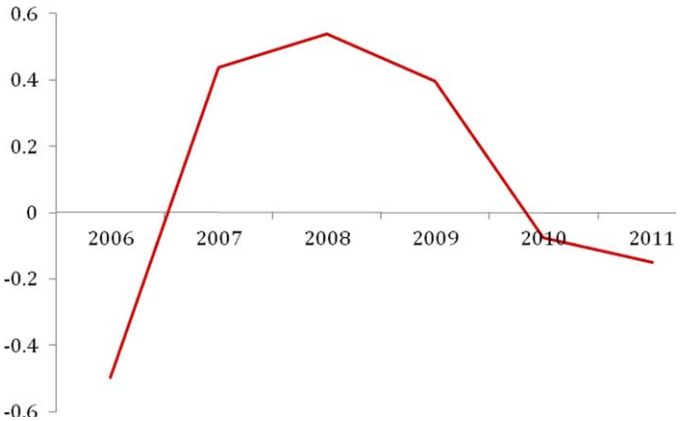

FIGURE 2. Yearly Variation (%) in the Number of Bankruptcies.
Source: American Bankruptcy Institute.

avoid liability just by adjusting their ratings to the new environment when the revisions come due. At the same time, liability cannot be avoided simply by downgrading firms that suddenly turn out to be riskier than originally foreseen. Once a rating is given or is confirmed, it will commit the CRA for three months in a proportion corresponding to the choice of α as defined in Part III.B.[136] After the expiration date, the standard negligence rule could be put back in place.

B. Postponed Liability for Rating Structured Finance Products

Although limiting liability to the short-term offers CRAs an effective protection against systemic risk in the case of corporate bonds, this solution may not be sufficient for structured finance and, more generally, whenever defaults can also be positively correlated in the short term. Under these circumstances, the liability of CRAs simply needs to be excluded, if defaults depend on systemic risk. In this perspective, however, it is still possible to imagine an incentive scheme grounded on the same model presented in the previous section, with the modifications below.

This system would work as follows. A public authority records the rating issued by the CRAs, the fees they receive, and the actual frequency of defaults of each structured finance product. Using α/Pr as a

[136] *See supra* notes 121–125 and accompanying text.

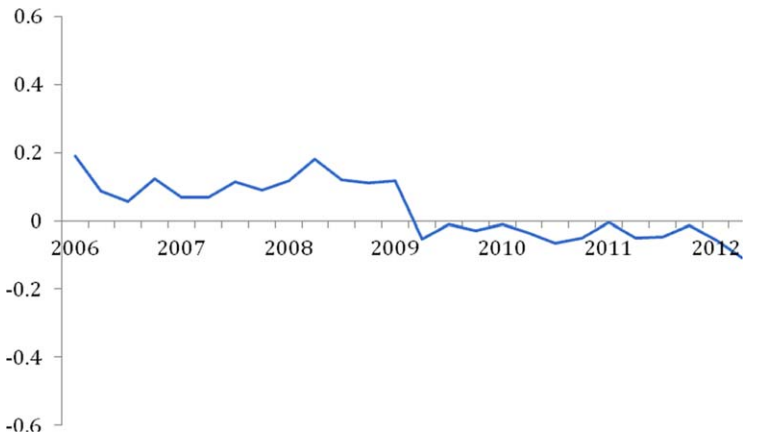

FIGURE 3. Quarterly Variation (%) in the Number of Bankruptcies.
Source: American Bankruptcy Institute.

multiplier, the regulator calculates the potential liability that each CRA has to face for each default. CRAs could still choose α as in the strict liability regime designed before. However, CRAs will not pay damage compensation whenever a structured finance asset defaults. Only after a certain time interval, say one year, the public authority will verify the overall accuracy of a CRA's predictions, which, in turn, will determine whether the CRA in question is to face liability for the assets that defaulted in the previous year. For example, let us consider the cluster BBB- (Baa3 using Fitch scale). The historical, annualized range of probability of default associated with this cluster is 0.025 - 0.032.[137] If, during the time interval considered, less than 0.032 of the assets included in the cluster have defaulted, then no compensation is due. Conversely, liability is triggered if the quality of ratings has been below the relevant threshold. In other words, the payment is due only if more than 0.032 of the assets included in the cluster BBB- has defaulted.

Postponing the imposition of the monetary sanction allows making liability conditional on the failure of CRAs to predict default over a

[137]This example is based on Fitch's historical (annualized) default experience. *See* Coval et al., *supra* note 16, at 9.

Table 1: Extended Time Frame to Determine CRAs' Liability in the Presence of Systemic Risk (a Numerical Example)

Year	1	2	3	4	5	$\sum$
ED	10	9	8	7	6	40
ND	9	8	7	6	10	40

sufficiently large number of observations.[138] This approach has two advantages in coping with systemic risk. First, if the predictions of rating agencies turn out not to be inflated over the relevant time frame, their profits will not be affected by the defaults occurring within their range of predictions because they will simply face no liability for those defaults. However, CRAs would still be liable to pay damages when the frequency of default in a given time interval exceeds the highest probability of default in the relevant class of rating. This effect is desirable to police rating inflation, but it also leaves CRAs exposed to systemic risk, particularly in those scenarios of "economic catastrophe" where structured finance assets tend to experience extraordinary rates of defaults. Financial crises are a case in point.

Fortunately, postponing the imposition of liability has a second advantage in coping with systemic risk. The timeframe for assessing the accuracy of the CRAs' prediction could be made long enough to absorb the violent fluctuations in the default of structured finance products, depending, for instance, on a financial crisis. For this purpose, the length of the interval is crucial. Whereas a one-year period could be sufficient to assess the accuracy of CRAs' ratings of structured finance in normal times, this might be just too short a time to compensate the sudden spikes in defaults coming along with a financial crisis. For this reason, we advocate the introduction of a double layer of protection for the rating of structured finance products. At a first stage, the *ex ante* predictions of rating agencies are compared with the *ex post* default rates during the year in question. As stated above, if the predictions are accurate over one year, no liability will be imposed on rating agencies. Conversely, if the CRA has underestimated the number of defaults over one year, the public authority could decide *on an exceptional basis* to impose

[138]It might be the case that the number of firms included in a rating class is not sufficient to assess CRAs' accuracy. In this circumstance, firms included in contiguous classes should be aggregated.

liability on the additional condition that ratings were also inflated over a longer time horizon. Importantly, in order to protect CRAs from systemic risk, the relevant time frame can be extended backward, not forward. If, because of a financial crisis, structured finance products have experienced extraordinary rates of defaults in a year, it will take many years before the situation returns to normal and even longer before the shock can be absorbed by the data.

Let us illustrate our solution with a simple numerical example. Assume that, for instance over the past five years, a rating agency has predicted for a given class of structured finance products the expected number of defaults (ED) indicated in Table 1. Let also the actual number of defaults (ND) be as reported in Table 1.

Only in the fifth year, the rating agency has underestimated the number of defaults. Therefore, under the normal rule, the CRA should be liable to pay a compensation based on the α/Pr multiplier. However, the public authority might exceptionally determine that a spike from 6 to 10 defaults from one year to another is a consequence of systemic risk, and hence it might extend the assessment interval. For example, regulation may provide that in such situations the assessment interval could be extended up to the average maturity of the structured finance products in question. If we posit, as in the numerical example, that the average maturity is five years, the latter becomes the relevant time frame to determine whether the CRA is liable. As the example shows, over a five-year period ED is equal to ND (40 defaults) and therefore, notwithstanding the spike in the number of defaults in the fifth year, the CRA will face no liability.

This solution would reward the CRAs who were more conservative in their ratings the years preceding a financial crisis, as those CRAs could count on historical frequencies of default below the maximum PD associated with the relevant letter grade. This effect is countercyclical, namely, it counters, however little, the formation of asset bubbles without standing in the way of a recovery of credit.[139] Although this solution ultimately relies on the e*x post* discretion of public authorities to cope with systemic risk—which we assume to be unpredictable—it is worth noting that this discretion is essentially limited to the declaration of a

[139]The countercyclical property of our solution is especially relevant given that ratings quality has been shown to be lower during booms. *See* Bar-Isaac & Shapiro, *supra* note 92, at 62.

status of financial crisis. All of the other consequences on CRAs' liability should be predetermined by regulation.

V. The Virtues of Capped Strict Liability

It is worthwhile to briefly highlight the benefits of the approach presented in this article. In the first place, the liability rule that we propose connects CRAs' expected profits to the quality of their ratings, thus inducing them to put money where their mouths are. In fact, by tying the expected liability to the rating assigned (and to the level of commitment accepted), the CRAs' profits will depend on the quality of their predictions. It follows that the problem of rating shopping is addressed implicitly, as any CRA that produces overoptimistic ratings to attract more issuers will be forced to face higher liability.

Moreover, our proposal introduces a damage cap based on objective factors. The cap has the important virtue to prevent overdeterrence of rating activity.[140] At the same time, this approach eliminates almost any discretion on the side of regulators and courts. The only exception is the declaration of financial crisis status necessary to offer CRAs rating structured finance products a second layer of protection against systemic risk. Otherwise, the rule we advocate carries sizeable savings in terms of administrative costs. There will be no need to scrutinize the behavior of CRAs or to establish complex standards of care in order to prevent them from producing inflated ratings.[141] Additionally, courts will not have to quantify the portion of damages attributable to the conduct of CRAs. Determining that an issuer or a bond have defaulted and multiplying the price by the probability of default associated with a given rating are (quasi-)automatic and (quasi-)costless tasks. The risk of litigation errors, frivolous litigation, and opportunistic settlements usually created by strict liability are ruled out.[142]

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[140]*See supra* notes 74–77 and accompanying text. *See also* Coffee, *supra* note 21, at 363.

[141]*See id*. at 347.

[142]Professor Coffee correctly notes that "under a regime of strict liability, it would still be necessary to show that the issuer made a material misrepresentation or omission before the auditor could be held vicariously liable. Given the potential of stock price drops resulting in damages in the multi-billion dollar range, this means that litigation errors could easily be bankrupting to the auditor, which, in turn, means that the auditor would be under great pressure to settle such litigation. Such pressure, in turn, exacerbates the problem of

Furthermore, this approach reduces CRAs' defensive tactics in the face of liability for a number of reasons. Primarily, strict liability automatically makes pro forma precautions unreasonable.[143] In other words, switching to a strict liability rule prevents CRAs from adopting "observable precautions" (i.e., precautions that can be verified *ex post* by a court) just to protect themselves from liability, instead of the "unobservable precautions" (i.e., precautions that cannot be verified *ex post* by a court) that would be efficient.[144] Second, as CRAs could perfectly predict their expected liability in any possible state of the world, it eliminates defensive conduct driven by uncertainty of courts' behavior.[145] Third, because CRAs can determine their liability exposure through α, they do not need any additional defensive mechanism.

As discussed above, another reason for CRAs' defensive behavior is the asymmetric nature of the sanctions introduced by the Dodd-Frank Act.[146] In the United States, CRAs are exposed to liability when they engage in rating inflation, but they face no liability for overly pessimistic ratings. Under our rule, CRAs that deflate the ratings of corporate bonds still face a liability significantly different from zero.[147] Thus, under the regime we advocate, issuing overly pessimistic ratings for corporate bonds is less appealing than under the Dodd-Frank Act.

On the contrary, in order to shield CRAs from systemic risk, for the rating of structured finance bonds, we have devised a solution that rewards instead of punishing rating deflation. Given the characteristics of the market for rating of structured finance products, this is a desirable strategy. Such strategy allows us to introduce a countercyclical device that counters CRAs' tendency to inflate ratings during economic

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'extortionate' or 'frivolous' litigation. . . . Hence, the prospect of 'frivolous' or 'extortionate' litigation increases in direct proportion to the degree to which one moves toward a strict liability regime." Coffee, *supra* note 21, at 349. All these problems are solved in our framework because everything is based on objective factors determined *ex ante*.

[143]*See* Coffee, *supra* note 21, at 306.

[144]*See supra* note 69 and accompanying text.

[145]*See supra* t notes 66–69 and accompanying text.

[146]*See supra* notes 10–15 and accompanying text. The other source of distortion, as discussed in the previous paragraph of the text, is the uncertainty regarding courts' behavior. *See* Craswell & Calfee, *supra* note 66, at 299.

[147]*See supra* notes 78–81 and accompanying text.

booms.[148] Moreover, the approach we advocate for structured finance products does not interfere with the market for ratings so long as the CRAs' predictions turn out to be accurate over a sufficiently long time span.

Finally, the incentive scheme described above ties the income earned by CRAs to the quality of their forecasting techniques, thus creating the right incentives also from a dynamic perspective. To understand this point, let us assume that three rating agencies exist: A, B, and C. A and B have developed state-of-the-art forecasting models; thus they are able to assess with greater accuracy than C the issuer's probability of default. Let us also assume that firms are divided in two groups, X and Y, which respectively have a low and a high probability of default. Under these assumptions C will not be able to distinguish between X and Y, and will therefore be forced to assign an average probability of default. Good issuers, however, could obtain better ratings from A and B because these rating agencies are able to better assess their creditworthiness. As a consequence, issuers belonging to the cluster X will switch to the two CRAs that are able to assign them the rating they deserve. The more good firms switch to A and B, the higher will be the average level of risk of the pool of firms rated by C. In the end, all the good firms that have a low probability of default will be rated by A and B, and the firms with a high probability of default will be indifferent between A, B, and C. In the real world, because the probability of default of rated firms approaches a continuous function, the only competitive equilibrium is one where every firm opts for A or B, unless they are so risky to be indifferent between A, B, and C. In this case, however, the rating would have hardly any added value for the issuer, and C would have to exit the market for ratings.

An identical reasoning applies to the parameter α when CRAs choose freely how much to expose themselves to liability. In fact, CRAs that can offer more accurate predictions can determine with greater precision when they can expose themselves to increased liability. It is obvious that good firms will have every incentive to hire the CRA that can adopt a higher value of α, both because this implies a higher commitment to rating accuracy and because—as we argued—a relatively high α should be

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[148] Jess Cornaggia & Kimberly J. Cornaggia, *Estimating the Costs of Issuer-Paid Credit Ratings*, 26 Rev. Fin. Stud. 2229, 2233 (2013).

a precondition for ratings to deliver regulatory benefits. For analogy with the mechanism described above, a high α will emerge as a result of CRAs' competition on the quality of forecasting techniques.

As a result, this liability regime not only prevents intentional misreporting but also induces CRAs to reduce—albeit not eliminate—the number of mistakes caused by the imperfections in the forecasting models.

Conclusion

There has been an enormous debate both at the academic and at the policy level on how to improve CRAs' incentives to produce accurate ratings. In this article, we propose the introduction of an expiring, capped strict liability rule with a contractual component. A damage cap based on objective factors is introduced in order to avoid crushing liability, whereas the expiration date is needed to shield CRAs from systemic risk whenever—as in the case of corporate bonds—defaults are largely uncorrelated in the short term. Furthermore, CRAs are allowed to determine contractually at what level they want to commit to their predictions. Importantly, no liability is imposed on them, unless they want their ratings to have legal relevance. Finally, in order to protect CRAs from systemic risk when defaults can be correlated in the short term (as in the case of structured finance), we propose a departure from the traditional approach to liability. By delaying the compensation until after few defaults have occurred, CRAs may be punished only when their predictions are proven inaccurate over a sufficiently large time interval.