

Remarks on “Recommendations and Alternatives to How the NAIC Uses Ratings”

for NAIC Rating Agency Working Group.

By Matthew Richardson¹

Given that the main responsibility of state insurance regulators is to protect the insurees, there is perhaps no agenda item more important than helping promote standards to ensure the solvency of insurance companies. This is not just because of the guarantees provided by the State guaranty funds (and possibly by the Federal government for Tier-one companies), but also the possible systemic effects a failure one insurance company could have on the sector as a whole.

As insurance companies are one of the largest investors in fixed income securities, it is crucial that regulators understand the risk of these investments and the potential for how a negative realization of the risk may lead to financial distress. In particular, if the insurance company has losses in its investment portfolio and/or problems with higher than expected claims, then the question arises whether the company has enough capital to cover policyholders. In addition, if the firm is interconnected to other firms (via reinsurance or through providing financial guaranties), or is large enough that a fire sale of its assets could cause a liquidity spiral, or is subject to a “bank-like” run on its liabilities, then its distress could have far-reaching effects.

Given these issues, the reliance on ratings by regulators to measure the risk of insurance company’s fixed income portfolios is inadequate. Even if the rating agencies had emerged from the current crisis unscathed, with their reputations intact, this statement would still be true.

Of course, a number of economists for years have criticized the rating agency system in the United States, and, in particular, the NRSRO status afforded some companies. On the one hand, a rating agency oligopoly, facing a severe conflict of interest in the issuer-pays model, led to a race to the bottom, and provided little incentive to either innovate or produce high quality product. This effect was amplified by having to rate complex products like the structured securities at the heart of the crisis. On the other hand, regulated investors, some insurance companies included, skirted regulatory capital requirements by trolling for the highest-rated high yielding securities. Regulators need to be more dynamic and flexible in their evaluation approach to risk.

Although the following comments hold generally for all securities, I will illustrate the ideas using structured securities as an example.

1. Ratings are not sufficient to measure the risk of fixed income securities. There are three risk components that need to be evaluated in the context of an insurer’s investment portfolio:
 - a. *Default risk.* We don’t know enough yet about the process by which the rating agencies evaluated the default probability and expected losses of structured securities. Was their analysis ex ante poor quality or are we simply judging them

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in hindsight? Clearly, the conditions were ripe for abuse – the economics involved with rating structured products, the involvement of the rating agencies in structuring the products, the aforementioned conflict of interests and so on. But I will leave this issue aside.

Instead, I want to focus on whether structured products can really be rated in a comparable manner. I think the answer is no, and regulators need to build this into the way they treat structured products as possible investments in the insurance industry. Structured securities are a portfolio of loans/bonds/mortgages that are issued on a prioritized basis, known as tranches, against the portfolio.

Mathematically, the payoffs on these structured securities resemble those of option combinations on the underlying portfolio. If one were to further structure the tranches, the so-called CDO² formulations, then the payoffs resemble options on options, defined as compound options in the academic and practitioner literature.

Understanding this connection to options is very useful. There is an extensive literature that shows valuation is very sensitive to the volatility of the underlying asset for option combinations, and to the volatility of volatility for compound options. So, for structured products, unless the analyst has near certainty about the volatility and correlations of the underlying loans in the portfolio that he/she will have to input into their ratings model, the output from their model will be quite unreliable. In fact, in a very simple framework, a recently published article that simulates the sensitivity of the ratings of structured products to assumptions about default correlations and default probabilities makes this very point.²

Ratings are an estimate of the likelihood of default and the losses associated with default. Estimates can be precise or imprecise, and this needs to be incorporated into the regulator's perspective on risk. The point here is that there is no way around this issue. Even in a world where the analyst has modeled the structured product perfectly, small changes in the underlying assumptions can have dramatic effects. This makes these securities have fundamentally different properties than the plain vanilla corporate and municipal bonds previously rated by the NRSROs.

- b. *Liquidity/funding risk.* Securities with fundamentally the same risk can offer different rates of return due to different levels of liquidity. Well-known examples are the off-the-run versus the most recently issued (on-the-run) treasury security. Liquidity is priced because there are times, such as a crisis, when investors need to convert the securities into cash, and some securities reside in markets where this is difficult to do. Structured products definitely fit into this class, and help explain why some of the so-called super senior AAA-tranches offered higher yields. Historically, insurance companies were holders of illiquid securities because their funding source, i.e., policyholder premiums, was relatively sticky and their overall investment portfolio risk was low. This is no longer necessarily

² Coval, Joghuis, Jakub Jurek, and Erik Stafford, "The Economics of Structured Finance", 2008, forthcoming *Journal of Economic Perspectives*.

true anymore. For example, as life insurers have become subject to runs due to the possibility of policyholders cashing in, and the risk of their investment portfolios have increased due to holdings of variable annuities, concentration of fixed income portfolios in illiquid securities may be problematic. Certainly, the regulator should incorporate liquidity into his/her thinking.

- c. *Market risk.* Even if securities have the same probability of default and expected loss, and have the same liquidity, these securities can offer different rates of return due to their level of market risk. Market risk is especially damaging to insurance companies because the company gets hit both by their fixed income securities falling in value along with their other investments and because their premiums (and therefore funding) begin to dry up as consumers and businesses try to conserve cash. Structured products, especially the safer AA- and AAA-tranches, are particularly unique in this respect. Almost all the risk of these securities is market risk as individual risks of the individual loans/bonds/mortgages have been diversified away. Only in a rare event in which there are widespread defaults will the securities bear losses, but, of course, this is when the company can least afford it. Therefore, a corporate bond with the same default probability and expected loss as a structured security should be considered less risky as much of its risk is diversifiable.
2. Some suggestions:
 - a. Clearly, the rating agency model needs to be fixed. This has been talked about for years and the current crisis shows these concerns to be valid. The focus should be on revamping the system which will increase competition (and therefore improve quality), and fixing the conflict of interests. There are a number of suggestions to do this.³

³ See, for example, Richardson. Matthew and Lawrence J. White, "The Rating Agencies: Is Regulation the Answer?", chapter 3 in *Restoring Financial Stability: How to Repair a Failed System*, 2009, John Wiley & Sons. The article discusses one approach to fixing the rating agency's business model of "issuer pays." The main idea is that the regulator should create a department that houses a centralized clearing platform for ratings agencies.

1. A company that would like its debt rated goes to the centralized clearing platform. Depending on the attributes of the security (i.e., type of debt, complexity of firm and issue, whether other debt outstanding is already rated, etc...), a flat fee would be assessed.
2. From a sample of approved rating agencies, the centralized clearing platform chooses which agency will rate the debt. While this choice could be random, a more systematic choice process could enhance beneficial competition. The choice would be based on the agency's experience at rating this type of debt, some historical perspective on how well the agency rates this type of debt relative to other ratings agencies, past audits of the rating agency's quality, and so forth.
3. For a fee, the rating agency would then go ahead and rate the debt. This model has the advantage of simultaneously solving (i) the free rider problem because the issuer still pays, (ii) the conflict of interest problem because the agency is chosen by the regulating body, and (iii) the competition problem because the regulator's choice can be based on some degree of excellence, thereby providing the rating agency

- b. But this is not sufficient going forward. Understanding risk is just not about an estimate of expected losses, but also about when those losses occur (i.e., market risk), when the portfolio may become impaired (i.e., liquidity), and how accurately we measure those losses ex ante. The regulator needs multidimensional inputs to judge the prudence of the insurance company's investment portfolio:
- i. Along with the rating, a measure of the ex ante accuracy (or confidence) of the rating. It may well be the case that certain structured products should not be rated.
 - ii. Along with the rating, and its precision, a measure of the securities' liquidity in the secondary market.
 - iii. Along with the rating, its precision, its liquidity, a measure of its market risk.
As an illustration, the AAA-tranche of a CD0² on a mortgage pool would get, in addition to its AAA-rating, a mark of high imprecision, illiquidity and market risk.
 - iv. Additional useful information would be current market prices of various related securities. There is extensive evidence that market prices tend to have more information about default probabilities and losses than those implied by ratings.

with incentives to invest resources, innovate, and perform high quality work. It does, however, put tremendous faith in the ability of the regulator to monitor and evaluate the rating agencies' performance.