



Reforming the Raters

Can regulatory reforms adequately realign the incentives of credit rating agencies?

BY RENEE COURTOIS

Just as consumer credit companies like Experian and Equifax issue credit scores for individuals, in bond markets credit rating agencies evaluate the risk level of securities that are issued by corporations, local governments, and other entities to raise money. The processes have substantial differences, but their purpose is largely the same: to reduce asymmetric information in financial markets that can otherwise raise the cost of connecting borrowers and lenders. This is a valuable market function.

In the last decade, rating agencies have been an essential part of the process of mortgage securitization, or turning home mortgages into bonds that were sold throughout the global financial market. Ratings opened up securities backed by mortgages, including many subprime mortgages, to a larger pool of investors than ever before, especially ones constrained by regulations to hold only assets of a certain safety level. This allowed profits from the booming housing market to be shared throughout the financial system.

Like lenders and investors, rating agencies shared in that profit. The “Big Three” rating agencies of Standard & Poor’s (S&P), Moody’s Investors Service, and Fitch Ratings, which together represent more than 95 percent of the market share in the rating industry, made record profits rating mortgage-backed securities: The Big Three’s revenue from ratings doubled from \$3 billion to \$6 billion during the 2002 to 2007 heyday of subprime lending and securitization.

In hindsight, many of these ratings did not do a good job of predicting the performance of the securities. The financial market turmoil — related to the declining housing market — that started in the summer of 2007 led the rating

agencies to revise ratings downward in record numbers. In 2007 Moody’s downgraded 31 percent of its asset-backed collateralized debt obligations (CDOs), most of which were based on mortgages. By just over six months into the crisis, S&P had downgraded 44 percent of the residential mortgage-backed securities (RMBS) based on subprime mortgages that it had rated from 2005 through the third quarter of 2007. In 2008 Fitch downgraded 51 percent of its ratings on residential mortgage-backed securities.

In each of these cases, a large proportion (by historical standards) of the downgrades was for securities rated AAA — the highest possible rating, typically associated with virtually zero default risk. The difficulty of pricing risks in what had become a worldwide mortgage-backed security market is ultimately what amplified the housing downturn and made it a global problem.

Rating agencies were by no means the only parties that underestimated the riskiness of these securities. Nonetheless, the role that rating agencies played in the securitization process has led to an intense discussion about reform within the rating industry, which will depend critically on understanding the incentives these agencies face to produce accurate ratings.

The Rating Process

The grade (called a rating) that a rating agency issues represents the probability the security issuer will default on the bond it is issuing. For the most part, issuers of the securities pay for the ratings to be developed, and then the majority of ratings are published on the rating agency’s Web site for

public consumption free of charge. Rating agencies rate virtually every corner of the financial market, from bonds issued by insurance companies to foreign governments to corporations. There are 10 official rating agencies in the United States and more than 60 rating agencies worldwide. The rating agencies are private, for-profit entities; of the Big Three, only Moody's is a publicly traded company.

The industry has been increasingly woven into financial markets since its birth in 1909, when John Moody began issuing public ratings of railroad bonds. Rating agencies were virtually unregulated by the federal government until 2007, when the 2006 Credit Rating Agency Reform Act was implemented. The act gave the Securities and Exchange Commission (SEC), a government regulatory body that acts as an advocate for investors, the authority to force the agencies to create certain procedures and investigate whether the agencies adhered to those procedures. But the SEC drew a very careful line prohibiting it from auditing the ratings themselves, or forcing agencies to modify the sophisticated methodologies used to produce them.

Rating agencies have historically centered their business on grading bonds issued by a single entity, such as a corporation or a local government, to raise money. However, in the last decade the agencies have gained an increasing amount of their revenue, between one-third and one-half depending on the agency, from rating a relatively new financial device called "structured finance" bonds — so named because they are "structured" out of other assets like mortgages. These are much more complex and harder to rate because they entail assessing the risk of many underlying assets.

A large class of structured finance products is RMBS. To grade an RMBS, a rating agency works closely with the security issuer, often an investment bank, to obtain background information on the security, including the characteristics — like the borrowers' FICO score, geographic location, loan-to-value ratio, and whether income documentation was provided — of each of the up to several thousand mortgages in the RMBS. Based on the risk characteristics of the mortgages in the RMBS, the rating agency uses sophisticated mathematical models and some subjective judgment to determine the probability that the issuer will default. Based on that probability, the rating agency assigns a grade to the security.

The grade is then provided to the issuer and, in the case of the Big Three, published on their Web sites. The agency continues to monitor the likelihood that the security issuer will default, updating its rating as necessary. Some rating agencies make these updates frequently to keep their ratings current, while others, especially the Big Three, intentionally do so only periodically to avoid erroneously adjusting ratings in response to temporary blips in financial markets.

A Structural Problem

No other industry is structured quite like the credit rating industry. Since the 1930s, certain financial institutions, such as insurance companies, banks, pension funds, and money

market mutual funds, have been required to hold only securities that have been deemed "investment grade" by a rating agency. Since then, rating agencies have been a part of the regulatory apparatus. In 1975 regulations also began setting minimum capital requirements for certain financial institutions based on the grades of the assets in their portfolio — if a regulated financial institution held risky assets, regulators would require it to keep a little extra cash on hand as protection.

But the SEC began to worry that bogus rating firms would emerge and issue beneficial ratings for anyone willing to pay. This compelled it to spell out exactly whose "grades" counted. For that, in 1975 the SEC created the nationally recognized statistical rating organization (NRSRO) designation for rating agencies. The Big Three were granted the NRSRO title by the SEC, and NRSROs were formally written into SEC and other regulations. It followed that many investors, even those whose portfolios weren't regulated in this way, would choose to also base their investments in part on ratings, further cementing demand for rating agencies' services.

In these early days, rating agencies were paid by the investors who were bound by regulation to use ratings in creating their portfolios. However, this changed around the time the SEC created the NRSRO category. With simple photocopying, those who did not pay could have access to the thick manuals of ratings published by the Big Three, introducing the "free rider" problem to the rating industry. Around the same time, the large bankruptcy of Penn Central Railroad — one of the largest issuers of commercial paper at the time — left issuers of securities desperate to prove to investors that their paper was sound.

The Big Three realized that issuers of securities, as opposed to investors, were ready and willing to pay for ratings, and they each moved to an "issuer-pays" structure. Currently more than 98 percent of all credit ratings issued by NRSROs are paid for by the issuer. The remaining ratings are paid for by subscribers, usually investors, which are kept private.

The issuer-pays model has not been easy for everyone to swallow. Critics say the rating agency being paid directly by the party that it is evaluating presents a conflict of interest because both sides have incentive for ratings to be as optimistic as possible. There is nothing preventing issuers from shopping around among rating agencies, or at least threatening to if they think they can get a higher rating elsewhere.

Rating agencies — which are paid according to the quantity of securities they rate — in turn have incentive to attract the business of issuers by providing ratings that are inflated, according to critics.

This structure doesn't guarantee that rating agencies will inflate ratings, but it certainly presents incentive for them to do so. The surprising volume of rating downgrades taken place since the housing downturn, coupled with anecdotal reports like a 2008 SEC investigation that found rating analysts participated in fee negotiations with issuers,

highlight the possibility that conflicts of interest might have affected the rating process in recent years.

For all its potential conflicts of interest, the issuer-pays structure apparently posed no large problem until the recent boom in subprime lending. There are two probable reasons for this. The first is that securities grew increasingly complex during this time period (see sidebar), which encouraged market participants to skimp on their own due diligence in favor of over-relying on the straightforward simplicity of ratings. Further, rating agency analysts' models may not have kept pace with the mounting complexity of RMBS and CDOs, causing them to underestimate some of the risk. In an open April 2009 SEC meeting on rating agencies, Daniel Curry, head of Canadian rating agency DBRS's U.S. operations, referred to increasing complexity as a "smokescreen" that obscured any inaccuracies of the ratings.

Second, growth in securitization from the mortgage market was exceptional — CDO issuance grew from about \$158 billion in 2004 to more than \$520 billion in 2006. The result was that large portions of rating agencies' revenue became increasingly concentrated in just a handful of clients since the lucrative and exceedingly complex securities were issued

predominantly by a few firms. According to an SEC review of 368 CDOs rated by the Big Three in 2006 and 2007, just 11 issuers accounted for 92 percent of them. These issuers would have the power to wield more influence on rating agencies to produce favorable ratings since, if they were unhappy with ratings, they could threaten to take a very large chunk of their business to a competing rating agency. The rating agencies merely being conscious of this predicament could be enough to encourage them to inflate ratings to keep business.

Supporters of the issuer-pays model, including the Big Three, say that the question of who pays shouldn't matter since the market would weed out any agency that didn't have an established reputation for producing accurate ratings. The issuer-pays rating agencies execute this "reputation building" by publishing all of their ratings, covering virtually every industry and every bond issuer, on their Web sites for public consumption, providing the opportunity for anyone, including competitors, to check on their ratings. This ratings transparency was described as a "substantial public good" by Raymond McDaniel, CEO of Moody's, in the April 2009 SEC roundtable. This public good would

Understanding Mortgage Securitization

In 2000 a J.P.Morgan analyst named David Li was intrigued by the frequency with which someone dies after a spouse passes away, commonly called the "broken heart" phenomenon. Li knew that insurance companies use mathematical techniques to estimate that probability for the pricing of insurance policies. He realized that a similar technique could be applied to financial markets and published a highly technical paper on the topic. He probably had no idea that his revelation would arguably contribute to the worldwide financial market downturn and the role that mortgage securitization had in it.

To understand how, you first need to know what mortgage securitization is. When mortgage lenders sell mortgages on the secondary market they are often grouped into a pool called a residential mortgage-backed security (RMBS). Then they are resold in pieces to institutional investors on Wall Street.

Creating an RMBS requires some financial alchemy. The issuer often divides the RMBS into groups called "tranches." Investors in the highest tranche get paid first as mortgage payments come in; then the middle tranches are paid. The lowest tranches are paid only if all the higher tranches have been paid first. In other words, they bear losses first so they're a riskier investment. For the top tranches to be affected, however, literally hundreds or thousands of homeowners in a pool would have to default on their mortgages at once. That's not very likely to happen.

The lower RMBS tranches, on the other hand, were obviously quite risky. But just as some mortgages could be

pooled to create a virtually risk-free asset, what if a new, safer security could be created out of the risky low tranches of RMBS too?

Issuers already had a name for such a security: A collateralized debt obligation (CDO), which is a bond that is itself backed by another pool of bonds and sold in tranches like RMBS. The key to creating a mortgage CDO is pooling together the low-tranche RMBS bonds in such a way that the probability they would default at the same time is sufficiently low. This would mean the high tranches are likely never to see losses. In fact, if the default probabilities are sufficiently uncorrelated, the higher tranches could even earn an AAA rating — even if they are comprised entirely of risky assets — and sold to investors looking for safe assets.

Estimating the correlation of a pool of bonds for a CDO is relatively easy when they are based on corporate bonds, which are relatively simple. But what if underlying assets are based on mortgages, each with different homeowner FICO scores, geographic locations, loan-to-value ratios, and dozens of other characteristics? It is hard enough to use those characteristics to estimate the probability of default for even one mortgage. Estimating the probably that the hundreds or thousands of mortgages would default together — their default correlation — would seem nearly impossible.

The trouble with assessing the default correlation of a pool of mortgages is that we haven't observed each mix of mortgage characteristics very many times in history to know how they affect the likelihood of default. Further, some of the characteristics, such as geographic location, are related across

go away if all rating agencies were required to switch to the “subscriber-pays” model that some of the smaller agencies use.

It may even be that it doesn't truly matter which party pays for ratings, since conflicts of interest can exist no matter who pays. For example, certain investors such as hedge fund managers could just as easily persuade a subscriber-based rating agency to downgrade a security, allowing them to short-sell it. “[A]s long as rating agencies are paid by any party with a financial stake in the outcome of our opinions ... there are going to be pressures,” said Moody's McDaniel in October 2008 testimony before Congress. “And so the question is not are there conflicts of interest. There are. It's managing them properly.”

Supply Does Not Meet Demand

Questions surrounding the incentive structure created by the issuer-pays model are not the only ones on the table. The rest comes down to supply and demand — both of which are set artificially by the SEC. By establishing the NRSRO label and parsimoniously choosing which rating agencies get that label, the SEC has created barriers to entry into the rating

industry. These barriers were lowered somewhat after the 2006 act; there are now 10 approved NRSROs in the United States.

In addition to restricting the supply of rating agencies, the SEC has established guaranteed demand for NRSROs by writing them into regulations. Issuers must get their securities rated in order for institutional investors — the largest investors in the market — to hold them, ensuring that they will always be in need of rating agencies' services. The presence of ratings in public regulations — and now in many private contracts and investment guidelines — could mean that the focus of a large proportion of the market's investors has shifted from holding sound investments to holding investments that are simply highly rated. These should be equivalent but may not be if there are active conflicts of interest.

Economist Lawrence J. White of New York University is one of the most vocal critics of the protection of NRSROs in regulations. He believes that regulators have essentially outsourced their responsibility to conflict-ridden credit rating agencies. “These third-party opinions had been given the force of law,” he says. “Federal regulations make it clear that

mortgages, but we don't always know how much. If a mortgage in Oakland County, Mich., defaults, how does that impact the probability that another mortgage there will, too, given the dozens of other differences between them? It's hard to say.

This is where David Li's paper comes in. Insurance companies had used a “Gaussian copula” function to estimate the probability of death — which he realized could also be used to estimate the “death” of a security, or default. The copula function predicts the likelihood of two events occurring when they are somewhat affected by each other.

The breakthrough of the copula model was that rather than gathering data from actual mortgage defaults, which are rare, the copula looked at prices in bond markets, which are abundant, to assess correlation. Through the lens of the copula function, movements in certain asset prices revealed their risk level, and produced the default correlation between them. CDO issuers no longer had to scratch their heads over the multitude of characteristics of each individual mortgage in the loan. The copula provided a much simpler way to evaluate default correlation. Thus, the mortgage CDO boom was born.

The appetite for these structured finance securities was substantial — in 2005, 81 percent of CDOs contained mortgages, the vast majority of which were highly rated by rating agencies. Institutions also had begun issuing insurance policies for these RMBS, called credit default swaps (CDS). The seller of the swap didn't even have to own the RMBS pool, and that allowed an unlimited number of securities to be created out of a limited number of mortgages. From

2001 to 2007, the CDS market multiplied more than 67 times to \$62 trillion, larger than the entire world's gross domestic product at that time.

CDO issuers became by far the largest purchasers of subprime mortgages in the secondary market, for the purpose of issuing more securities. Subprime mortgage lenders saw such a strong demand for their subprime loans that many were encouraged to provide more of them, sometimes lowering their lending standards to do so.

Securitization allowed the proliferation of mortgage-related securities to expand far beyond the number of actual mortgages extended during the boom. This explains how the global economic impact of the housing market decline has been many times larger than the total losses in subprime loans. Securitization is not the enemy — it remains an important way for financial markets to hedge risk. The copula's flaw was that the correlation estimates it provided were extremely sensitive: As soon as market conditions changed a tiny bit, the correlations became highly inaccurate. As mortgage holders defaulted in increasing numbers, so did the trillions of dollars of securities on which they were based. The logic of mortgage securitization was based on pooling assets that were not likely to default together. But issuers and rating agencies never accounted for the possibility that house prices would turn negative simultaneously in so many regions.

But don't blame Li for the mess others may have made of his model. “The most dangerous part,” he warned in the *Wall Street Journal* in 2005, “is when people believe everything coming out of it.”

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'investment grade' is something entirely the creation of the rating agencies." Meanwhile, he notes, all ratings are alongside disclaimers that the ratings are purely opinions and shouldn't be construed as investment advice.

In fact, the rating agencies cannot be held liable for the quality of their grades. Several court cases have ruled that ratings are opinions, legally equal to those of journalists and therefore protected as "freedom of speech" under the First Amendment. "We are giving the force of law to a bunch of judgments where the judgment providers are caveating and taking absolutely no responsibility for the force of law they were granted," White says.

Just how rating agencies could be held responsible is tricky, however. The procedure of the Big Three is to adjust ratings only after fundamental changes in order to avoid mistakenly responding to short-run market fluctuations as opposed to a security's fundamental health. So what constitutes getting a rating "wrong" as opposed to simply declining to adjust a rating in response to what the rater believes is a temporary market turn?

Rating agencies argue that if you saddle them with liability for the imprecise art of rating securities, the industry would no longer be profitable and wither away. "Ultimately, we are not guaranteeing all the securities," said Sean Egan of Egan-Jones, a subscriber-based agency, in an October 2008 testimony before Congress. "There is too much out there. The industry would go away ... if you did away with the freedom of speech defense." Barron Putnam of LACE Financial, a smaller subscriber-pays agency, adds, "The industry needs changes, but you have to be sure that you don't kill it."

White agrees, sort of. "It can't be a healthy situation to sue them anytime they make a modest mistake," he says, "but for big mistakes they ought to be held liable. There is a difference between the kind of things they do and the kind of things the *New York Times* and *Wall Street Journal* do."

The agencies argue that they are indeed held liable — again referring to the possibility that their reputations for producing reliable ratings will be tarnished when their ratings have to be downgraded. Heads of the Big Three have conceded that their reputations have suffered as a result of the subprime and securitization mess.

However, White is skeptical that concerns over reputation provide sufficient incentive for rating agencies to stay in line. "The problem is, that's what Arthur Andersen told us up until the end of 2001, and we know where they ended up," he says, referring to the history-making collapse of the accounting firm scandalized by Enron. "Of course there's always the long-run incentive to maintain one's reputation, but it can get overpowered, clouded, by short-run conflicts and short-run temptations." He says this is what appeared to happen during the mortgage lending and securitization boom.

So far, the rating agencies have not withered away like Arthur Andersen, and no one seems to expect that outcome. For example, one of the Federal Reserve's recent programs to assist financial markets, the Term Asset-Backed Securities

Loan Facility (TALF), makes loans to investors only if backed by highly rated collateral, as deemed by the rating agencies. The Fed explained its reliance on the rating agencies by pointing out that their grades on asset-backed securities unrelated to mortgages have been more stable, and that ratings are not the only criterion used for TALF collateral.

The Call for Bolder Reform

White is among a growing group of academics who advocate taking NRSROs out of the regulatory process completely by removing all references to them in SEC rules. Certain investors would still be required to hold assets of a given safety level, but the burden of proof of the safety of that portfolio would be placed on the regulated financial institutions. They could deal with this either by conducting their own analysis on their portfolios, or by consulting an advisor, which could very well be a rating agency. However, rather than blindly using the ratings as justification for the assets they hold, they would need to justify to regulators why they believe the rating agencies' opinions on their portfolios are sound. Indeed, a key reason to write NRSROs out of regulations would be to encourage investors to rely on alternative measures of risk that are market based, such as spreads on asset yields.

In June 2008 the SEC did propose writing NRSROs out of regulations, although the proposal has been absent from all subsequent iterations of regulation changes. A new set of SEC rules that have been proposed but not yet adopted are geared toward improving competition by requiring background information on securities to be shared among rating agencies. This would allow competing agencies to formulate and publish second opinions based on the very same information that the initial rating agency used. The issuer-pays rating agencies do currently publish these unsolicited second opinions, but they are based only on information that is publicly available, which is of significantly less detail.

These proposed regulations carefully traverse what is actually a fine line between promoting competition and destroying it. The concern of some of the agencies is over the potential infringement on proprietary information such as the agencies' rating models. If forced to share them, the smaller subscriber-pays agencies, which don't make their rating methodologies public, could be disproportionately affected, further increasing barriers to entry in the industry. Some of these agencies view their classified ratings models as their most important asset.

Perhaps surprisingly, a recent batch of research has suggested that competition in an industry dominated by the issuer-pays model may not actually improve the quality of ratings. A 2009 paper by New York University economists Vasiliki Skreta and Laura Veldkamp shows that increasing the number of rating agencies in the game could enlarge the pool from which securities issuers can shop for ratings. In a world where the average security has grown more complex, as in the past decade with RMBS and CDOs, the more

likely raters are to evaluate a security differently and thus issue different ratings. The wider the dispersion of possible ratings, the more likely an issuer is to find one that is overly optimistic — an outcome that is possible even in the absence of any fraud or active conflict of interest. Further, a 2009 paper by Bo Becker and Todd Milbourn of the University of Illinois at Urbana-Champaign and Washington University in St. Louis, respectively, suggests that since competition reduces profits in an oligopolistic setting like the rating industry, it may also reduce the relative payoff for rating agencies to “invest” in developing a reputation for publishing consistently high-quality ratings compared to other revenue-generating activities like ratings inflation.

Despite his instincts as an economist, White is also not convinced that increased competition is the answer given the industry’s other significant structural flaws. “I’m a pro-competition guy, but I have to acknowledge the possibility that in this fifth-best world it may well be that increasing competition may have perverse consequences.”

On the other hand, LACE Financial’s Putnam thinks increasing competition is crucial to driving the agencies’ primary incentive back to building a reputation for creating high-quality ratings. “If you control so much market share, you’re not really accountable to anybody,” he says. Besides, he adds, if the current regulations on the table don’t work, increasing competition will be hard to avoid for another reason: “Congress and the SEC can pass reforms to make them do a better job, but in the long run if you can’t straighten out the industry, and something like the current mess happens again, Congress will likely address the problem with antitrust regulation.”

Incentivize Me

While regulations may make ratings disproportionately important to issuers and investors, the agencies say that many investors misunderstand their purpose to begin with: The grades assess the probability of default, nothing more. They are not meant to signify whether an investment is

adequately priced or aligns with a given investor’s risk appetite. Furthermore, two assets with the same rating may exhibit great differences in price volatility. Investors are particularly prone to over-relying on rating agencies in an environment in which securities are growing excessively complex. A simple letter grade is an enticing way for an institutional investor to meet a regulatory requirement and also take part in an opaque but burgeoning market that many of its competitors are finding profitable.

Ratings are intended to be simply one tool of many for reducing asymmetric information, however. This logic was spelled out in the SEC’s initial regulations requiring institutions to rely on NRSROs. But the profitability and complexity of the securitization market in recent years induced investors to ignore this caution, a fact that issuers and rating agencies may have intentionally or unintentionally exploited.

Even those who argue for taking credit rating agencies out of regulations do not argue that the agencies provide no value to the market. However, without the status as a government-protected oligopoly, the agencies would be profitable only if investors perceive that they produce consistent, high-quality ratings. In other words, it would emphasize the need for the agencies to build a reputation by developing a proven track record. What may also abet that process is better procedural oversight of conflicts of interest — such as oversight rules adopted by the SEC in February 2009 — which should fall short of regulating the ratings or methodologies themselves.

At any rate, the discussion highlights that even if there is no intentional fraud, the current structure of the rating industry can, and did, produce adverse outcomes. Whether any particular agency engaged in intentional wrongdoing will take more than the duration of the present economic downturn to ascertain. Perhaps the most important outcome, however, is that this has called attention to the incentives that rating agencies faced in the past and still face today. **RF**

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