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April 25, 2014

Two Views of the Involvement of Credit Rating Agencies in the Mortgage Crisis

A lot of people have blamed credit rating agencies (CRAs) for helping to cause the mortgage crisis. The report of the Financial Crisis Inquiry Commission (FCIC) labelled CRAs as "key enablers of the crisis," because the exploding mortgage-backed bonds that caused so much trouble could not have been sold without stamps of approval from the CRAs. Commentators often link CRA failings to the fact that they are paid by the issuers of the securities they rate, with the implication that CRAs are thus given incentive to award good ratings to securities that do not deserve them. Indeed, two recent articles by academic economists on this topic come to the same conclusion: financial markets would work better if we scrapped the issuer-pays model in favor of some other way to pay CRAs for their evaluations. But the two articles disagree on why this is so, and understanding the source of this disagreement sheds some harsh light on claims that CRAs should be even partly blamed for the financial crisis in the first place.

Grade inflation in the student-pays model

The first article is a *Wall Street Journal* op-ed piece by Princeton economist Alan Blinder. Blinder likens the awarding of credit ratings to mortgage-backed securities to his own awarding of letter grades to his Princeton students. "Suppose I proposed to grade my students by a 'student pays' model," Blinder suggests. Such a setup would encourage him to give easy As in hopes of attracting more students and higher pay, and the information in the grades would suffer as a result. "Yet that description comes pretty close to mimicking the way we pay rating agencies," Blinder writes. "Looking back, is it any wonder that so many securities were blessed with undeserved triple-A ratings?"

One interpretation of Blinder's analogy is that college grading works better than securities rating because universities have not adopted the student-pays model. That argument will seem curious to many college instructors, because this model approximates their own compensation arrangements pretty well. Students may not write checks to professors, but they (or their parents) write checks to colleges, who then pay the professors. Instructors whose grades are overly harsh in relation to other courses are likely to see their class sizes dwindle, to the dismay of department chairs facing hard budget constraints. Even if an instructor has no problem attracting students, she may not want grading disparities among courses to distort student decisions on what to study, so she might ease up in her own grading as well. Given the incentives of professors, it is not surprising that grade inflation is debated at many universities, even the very best ones. A December 2013 article in Harvard University's student newspaper, the *Crimson*, described a faculty meeting at which a professor bemoaned the fact that the most frequently awarded grade at Harvard College is an A-minus. A university dean corrected him: "The median grade in Harvard College is indeed an A-minus," the dean is quoted as saying. "The most frequently awarded grade in Harvard College is actually a straight A." (Disclosure: Harvard's grading policy is of personal interest to two authors of this blog post, who teach intermediate macroeconomics courses there in their spare time.)

Rational employers, rational investors

If the student-pays model leads to grade inflation, then don't we have even more ammunition that the bad incentives inherent in the investor-pays model for CRAs is partly responsible for the mortgage crisis? Not necessarily. For bad CRA incentives to have caused the crisis, two things must be true: one, the incentives must have caused inflated ratings, and two, the investors had to believe the inflated ratings. The second step in this causal chain is open to question. If the investors knew that the issuer-pays model gave incent to the rating agencies to inflate ratings, then rational investors would have taken that information into account when making investment decisions.

The college-grading analogy is again useful here. Consider an employer who is thinking about hiring a recent graduate who received a B-minus in a course that is highly relevant to what the firm does. How should the employer use this information? One option would be for the employer to look up how the student's

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official university documents define a B-minus—the documents are likely to define a grade in the B range as indicating a better-than-average understanding of the material. But a rational employer who knows the incentives facing American professors would also know that instructors are given cause to inflate grades. The firm could thus surmise that an applicant on the border between a B and a C may actually have a lower-than-average mastery of the subject. In the same way, rational mortgage investors who knew that CRAs had incentive to inflate ratings would have taken those ratings with a grain of salt when evaluating mortgage-backed investments.

Investor rationality plays a prominent role in a second recent piece on CRA incentives, a formal paper by the economists Anil Kashyap and Natalia Kovrijnykh (KK). Because this article is part of the academic economics literature, the authors adopt the fundamental assumption that all actors in the model are rational. As we might expect from our analogy of the job applicant, the rationality assumption makes a big difference when analyzing CRA payment regimes. Consider a situation in which CRAs are paid by the issues of securities, as they are today. Further assume that CRAs receive more money for good ratings than for bad ones. Rational investors in the KK model would realize the ratings are likely to be inflated under this set of incentives and would deflate the ratings accordingly. But if the CRAs are unable to fool investors who know both the CRAs' preferences and their opportunities, then the CRAs might as well tell the truth. KK therefore constrain their attention to equilibria where rating agencies are always truthful.

The revelation principle

In assuming truth-telling, KK are following a long tradition in the modeling of imperfect information. In fact, the assumption that actors with private information tell the truth shows up so often in models of imperfect information that it has a special name: the revelation principle. This principle is useful for modelers because it allows them to focus on equilibria in which the agent with private information has no reason to lie. To be clear, in this situation, the revelation principle does not mean that rating agencies never lie. Rather, it states that any equilibrium in which rating agencies lie is equivalent to one in which they tell the truth. The lying doesn't affect the actions of investors who know the incentives and opportunities of the CRAs, just as inflation of our B-minus student's grade does not lead the employer into an inappropriate hire. Because lying does not encourage agents to take inappropriate actions, it can safely be ignored when thinking through the fundamental aspects of the problem.

The appropriateness of the revelation principle in this context hinges on the ability of mortgage investors to analyze CRA incentives and opportunities and thereby back out the truth. Is this realistic? Ironically, the critics of CRAs provide evidence in support of this view. When Barney Frank alleged that CRA incentives led them to inflate ratings, he was doing exactly the sort of reverse engineering that lies behind the revelation principle. And if legislators could figure out that rating agencies had distorted incentives, why couldn't investors, who were putting up their own money? Indeed, investors should have had much better information about agency incentives than Barney Frank. It turns out that financial intermediaries lost enormous sums on the mortgage-related securities that they purchased and held on their balance sheets (more details on this in the next post). At the same time, they were also large issuers of these securities. Who would know better about the potential for corruption of rating agencies than the financial intermediaries that supposedly corrupted them?

Of course, if the KK model holds that rating agencies always tell the truth, then the model cannot rationalize arguments that CRAs helped cause the crisis by misleading investors. Indeed, the revelation principle makes it hard to rescue any story about untruthful CRAs. What if credit rating agencies had private information about their incentives, in addition to private information about their effort and the quality of the securities that they rated? Setting aside the fact that the issuer-pays model of credit ratings was common knowledge in the market, this change to the model has no effect on its outcome. Here again, the revelation principle would imply that CRAs truthfully reveal the private information about their incentives. For investors to be misled, they cannot simply be confused about incentives. Rather, they must believe that the CRAs' incentives were better aligned than they actually were. In our view, that is unlikely.

CRA payment arrangements

We began this post by noting that both of the recent articles on CRA incentives argued against the issuer-pays model. How can KK make this argument if investors in their model are not fooled? The reason involves some subtle implications of exactly how CRAs are paid in different states of the world. In all contracts in KK's issuer-pays regime, CRA pay is contingent on the outcome of the security. That means that if an AAA-rated security defaults, the CRA gets paid less than if the security pays off. To induce effort by the CRA, the spread between the payoffs must be large (that is, the CRA must be paid a lot more when the AAA security is successful compared to when it defaults). Because of

limited liability, the CRA's compensation is bounded below by zero when a bond defaults—that is, investors can't demand payment from the CRAs in the default state—so high-powered incentives, which require high average pay, imply that compensation to the CRA in the good state has to be very high. As a result, paying the CRA for high effort can be prohibitively expensive for the issuer, causing the issuer to settle for low-powered incentives instead and thus receiving low effort from the CRA. Even in the low-effort equilibrium, however, CRAs increase the information set of investors and are socially useful.

Going farther, KK show that having the investor rather than the issuer pay the CRA solves the limited-liability problem and thereby raises social welfare. Particularly surprising about this finding is that the investor-pays model is not only good for society, but it is also good for the CRAs! The reason once again involves the revelation principle. In equilibrium, everyone knows both the amount and usefulness of the effort expended by the CRAs in evaluating securities. The larger the CRA's social benefit, the more the CRA gets paid. If KK's model is accurate, then CRAs themselves may lead the way to a better social outcome by encouraging the adoption of the investor-pays model.

While KK's paper includes many specific lessons about potential CRA payment arrangements, the bottom line to emerge from a comparison of the Blinder op-ed and the KK model involves their differing assumptions regarding investor rationality. The KK model illustrates how the revelation principle, which follows from investor rationality, works against the argument that CRAs helped cause the crisis by misleading investors. As long as investors understand the basic structure of the market, then standard models of asymmetric information—of which the KK model is an example—do not predict that investors will experience large and unexpected losses.

You can read the Harvard *Crimson* article on the [magazine's website](#).

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