A Re-Examination of Rating Shopping and Catering using Post-Crisis Data on CDOs

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Abstract

We re-examine rating shopping and catering among CDOs by replicating a portion of Griffin, Nickerson, and Tang (2013) using post-crisis data. Our results are consistent with continued rating shopping and diminished rating catering behavior after the great financial crisis.

Keywords: Collateralized debt obligations; credit rating agencies; credit spread; rating shopping; rating catering

JEL Codes: G14, G24, G28

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1. Introduction

Investors' reliance on the two major credit rating agencies (Moody's and the S&P's) to accurately rate collateralized debt obligations (CDOs) has been targeted by the Dodd-Frank Act (DFA hereafter) as a major factor leading to the financial crisis of 2008. Griffin and Tang (2012) and Griffin, Nickerson, and Tang (2013, GNT hereafter) present evidence of inflated CDO ratings prior to the financial crisis. We replicate a portion of GNT's analysis to uncover investor perception and rating agency behavior toward AAA-rated CDOs after the financial crisis in the post-DFA era.

Overall, the literature contains two prominent theories regarding the inflation of CDO ratings. The first, rating shopping, involves CDO issuers soliciting ratings from multiple rating agencies with the intention of only disclosing the most favorable ones (Skreta and Veldkamp, 2009). In its purest form, rating agencies produce unbiased ratings that could be different because of differences in their rating methodologies. The ratings that investors can see are biased, however, due to issuers' selective disclosure. While the DFA requires CDO issuers to report all formally solicited ratings, in reality rating shopping could still be going on through informal discussions about credit quality between investment banks and rating agencies.

The other theory, rating catering, builds on rating shopping yet directly implicates the rating agencies. It hypothesizes that since CDO issuers are shopping for the most favorable rating, rating agencies inflate credit ratings to compete for revenue and market share (Bolton, Freixas, and Shapiro, 2012). While reputational concerns would normally rein in this sort of behavior, there is little CDO rating history before the financial crisis for investors to assess the reputation of the rating agencies. This has changed in the post-DFA period, however, with rating agencies desperately trying to salvage their tattered reputation. The DFA has also ramped up

rating agencies' legal liabilities when it comes to failures to "conduct a reasonable investigation of the rated security."

Using data on CDOs originated after the financial crisis, we find a much higher percentage of single-rated AAA CDO capital than GNT's summary statistics using pre-crisis data. Meanwhile, dual-rated CDO capital with rating disagreement does not experience a significant increase relative to the pre-crisis period. Furthermore, we find dual-rated AAA CDOs to be safer than single-rated ones in terms of having lower credit spreads and a smaller number of notches of subsequent rating downgrades. This contrasts with GNT's pre-crisis findings that dual-rated CDOs are downgraded more than single-rated ones, but investors incorrectly believed that dual-rated CDOs are safer by assigning them lower credit spreads. These findings support the conclusion that rating catering is not a prevalent force in the post-crisis CDO market. However, in spite of the DFA, rating shopping by CDO issuers appears to persist after the financial crisis.

2. Sample Construction

We use Bloomberg to examine the 659 originated CDO deals (consisting of 3,585 tranches) rated by either Moody's or the S&P's from 2009 to 2013. Next, we research each individual tranche's credit history in order to isolate those that were originally rated AAA to study their initial credit spreads and subsequent downgrades.[1] We keep the majority of the CDOs with available floating coupon spreads above an index such as the 3-month LIBOR, and we remove a few duplicate CDO deals that have unique ticker symbols. Finally, we identify CDO

[1] GNT also analyze CDO model inputs estimated from rating agencies' surveillance reports. We do not replicate this part of GNT's analysis because we do not have access to these proprietary reports.

deals in foreign currencies and convert each tranche's original and current outstanding capital into US dollars.

After these adjustments, the sample contains 458 CDO deals and 622 AAA tranches, indicating that the majority of the CDOs have a single AAA tranche. Overall, $681 billion of CDO capital was originated from 2009 to 2013, 46% of which, or $313 billion, was assigned AAA ratings, a sizable decrease compared to the 75-80% that GNT find in their study. Assuming that CDO collateral quality has not further deteriorated after the financial crisis, this decrease suggests that rating agencies have tightened their standards. We also note that the number of deals and total issued CDO capital in the post-crisis sample are much smaller than the sample size in GNT. This is likely due to shrinking investor demand after the high defaults and major downgrades of CDOs during the recession. Nevertheless, our sample is large enough to draw moderately robust conclusions.

3. Does CDO Issuance by Rater Suggest Shopping or Catering?

Table 1 reports the tranche-level breakdown of CDOs rated by the S&P's, Moody's, and Fitch from 2009 to 2013. Only tranches rated AAA by at least the S&P's or Moody's are included in Table 1. Panel A sorts the 622 tranches by rating agency coverage to contrast the amount of solo and multiple rated capital. Panel B includes tranches rated by both Moody's and the S&P's to analyze the disagreement across these rating agencies.

The 41% of solo rated capital in the post-crisis sample in Panel A is a dramatic increase compared to the 8.3% in the pre-crisis period according to GNT. If the DFA has successfully eliminated rating shopping, some CDO issuers with deals on the margin of deserving two AAA ratings would choose not to solicit a second rating for fear that the deals will receive mismatched

ratings. However, the ability of the DFA to prohibit rating shopping does not seem likely because it only mandates the disclosure of formally solicited ratings. That rating shopping is still ongoing is also consistent with Panel B showing that the amount of dual rated capital with mismatched ratings is only 3.2% of the total. In GNT's pre-crisis sample, this fraction is 3.7%. There ought to be more mismatched ratings if issuers cannot rating shop post-crisis.[2]

A more plausible explanation of the increase in solo rated capital is that rating agencies are no longer catering and adding dual certification indiscriminately to all deals. As a result, many deals that would have received an additional catered rating pre-crisis are now only receiving a single AAA rating.

Another interesting observation from Panel A is that only 0.2% of the capital (consisting of 4 tranches) receives ratings from all three agencies, which contrasts with 37.2% in GNT's sample. This suggests that investors value the additional certification of multiple ratings much less than before the financial crisis.

4. Do Investors Perceive Additional Information from Multiple Ratings?

In this section, we formally examine investor perception of CDOs with multiple ratings as reflected in their floating spreads. With rating shopping, ratings are still unbiased assessments of quality, and two AAA ratings indicate superior underlying collateral compared to only one rating. With rating catering, however, multiple ratings have no added informational value since the second rating is upward-biased.

[2] Panel B shows that the number of CDO tranches with mismatched ratings is only 1.3% of dual rated ones, in contrast to 5.3% in GNT. This decline could also be attributed to a lack of investor demand for sub-AAA CDOs after the crisis, causing these deals to be cancelled and re-bundled into other deals (CreditFlux, 2016).

Using the floating spread at the tranche level, we compute the weighted average yield spread of a CDO's AAA-rated tranches. We separate the data into three mutually exclusive groups. The *One rater* variable classifies a CDO whose AAA tranches are rated by either the S&P's or Moody's, but not both. Next, the *Two-disagree* variable represents CDOs rated by both the S&P's and Moody's that receive more AAA tranches from one agency than the other.[3] Finally, *Two-agree* is the default category, representing CDOs that receive a matching number of AAA tranches from both agencies. We include binary control variables for whether Fitch also rated the CDO, whether the deal is a synthetic CDO, and the year of issuance. In the regression, the base case is a CLO deal rated AAA by both agencies in 2013.[4]

Table 2 shows the OLS regression results of the weighted average yield spread for deals rated by Moody's, the S&P's, or either of the two agencies. When all CDOs are used in the regression, investors demand an additional spread of around 4 basis points for deals only rated by one agency. This gap increases to roughly 9 basis points for deals rated by the S&P's. While these estimates are likely not significant due to the smaller sample size, the magnitude of the higher spreads for solo rated deals is consistent with GNT's findings, and suggests that investors still view CDOs that only received one rating as slightly riskier. Moreover, as in GNT, we find that CDOs with a Fitch rating are associated with lower spreads, though the coefficient is significant only in the first column of Table 2.

[3] This category is subsequently dropped from our analysis because there are only four deals with mismatched ratings.
[4] We find that CLOs are much more frequent than CDOs after the financial crisis (all but four deals in our sample are CLOs), presumably because CDOs originated before the crisis suffered huge losses and investors turned instead to safer collaterals like bank loans. This also explains the erratic behavior of the coefficient on the CDO dummy in Table 2.

5. Does CDO Performance Suggest Shopping or Catering?

Lastly, we examine CDO rating downgrades to disentangle rating shopping and catering in the post-crisis period. Again, we sort the CDOs into the mutually exclusive categories of *One rater* and *Two-agree*, discarding the *Two-disagree* category because it contains only 4 deals. Then, we divide the CDOs according to their year of issuance and compare the average number of notches of rating downgrade for the lowest AAA tranche of each CDO (from inception to February 2016). We do this for deals rated by the S&P's (Figure 1) and Moody's (Figure 2) separately.

Both figures show that the majority of downgrades occurred between 2009 and 2011, likely due to improving economic conditions as well as CDOs originated later on having less time to experience a downgrade. While Figure 1 shows that there is no consistent difference in the rating downgrade history between the two categories of CDOs rated by the S&P's, Figure 2 shows that the *One rater* category is downgraded much more by Moody's than the *Two-agree* category. Both of these findings differ from GNT, where single rated deals experience significantly fewer downgrades than CDOs with matched AAA ratings. On average, single rated CDOs are downgraded by Moody's (the S&P's) around 2 (0.5) more notches than dual rated CDOs after the financial crisis.

In Table 3, we present the results of an ordered logit regression of the magnitude of downgrades (number of notches) for single and multiple rated CDOs, with the weighted average yield spread added as a control for the credit quality of the CDO. The reported odds ratios show that an AAA deal exclusively rated by the S&P's (Moody's) is 1.8 (3.8) times more likely to be downgraded than a deal rated AAA by both agencies.[5] In contrast, GNT find that the relative

[5] The latter estimate is significant at the 1% level.

likelihood of downgrades is roughly half for single rated deals compared to dual rated ones before the financial crisis.

6. Conclusion

We find that there has been a vast increase in the percentage of single rated CDOs issued post-crisis (Table 1). Investors' perception is that dual rated CDOs are less risky than deals rated exclusively by either Moody's or the S&P's (Table 2). Furthermore, the superior credit performance of dual rated CDOs suggests that investors correctly perceived the added risk of single rated CDOs and correctly valued the additional information content of dual rated deals (Table 3).

While the lack of evidence on rating catering stands in sharp contrast to GNT, we must emphasize a few points of caution. First, we do not analyze the so-called rating agencies' AAA adjustments, which GNT performed extensively to uncover more direct evidence of catering. Second, the composition of our post-crisis sample is tilted heavily toward CLOs. This is significantly different from GNT's pre-crisis sample, which contains many re-securitization product types such as ABS-CDO and CDO^2. Lastly, it is possible that the renewed pressure from newcomers (e.g., Morningstar and Kroll) can gradually push incumbents like Moody's and the S&P's back to their old catering behavior (see Flynn and Ghent, 2015 for related evidence).

7. References

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Table 1. The CDO sample. To be included in our sample, a CDO tranche must be rated AAA by either Moody's or the S&P's from 2009 to 2013. Panel A breaks down the entire sample by number and the amount of capital. Panel B breaks down the subsample of tranches rated by both Moody's and the S&P's by number and the amount of capital.

Panel A: AAA tranche-level rating coverage

	Number	% Total	Capital ($B)	% Capital
Solo Rating	137	22.0%	128.1	41.0%
S&P's	49	7.9%	21.8	7.0%
Moody's	88	14.1%	106.3	34.0%
Multiple Ratings	485	78.0%	184.6	59.0%
S&P's & Moody's	379	60.9%	101.3	32.4%
S&P's & Fitch	57	9.2%	15.6	5.0%
Moody's & Fitch	45	7.2%	67.1	21.5%
S&P's, Moody's, and Fitch	4	0.6%	0.5	0.2%
Total	622	-	312.7	-

Panel B: Degree of AAA tranche ratings agreement

	Number	% total	Capital ($B)	% Capital
Same rating	378	98.7%	101.9	96.8%
S&P's AAA only	1	0.3%	0.0	0.0%
Moody's AAA only	4	1.0%	3.3	3.2%

Table 2. CDO yield spreads vs. single/multiple credit ratings. The dependent variable is the weighted average yield spread of the CDO's AAA-rated tranches. The independent variables include One rater, which equals one if the CDO's AAA tranches are rated by either the S&P's or Moody's, but not both; Fitch rated, which equals one if Fitch also rates the CDO; and CDO, which equals one if the deal is a synthetic CDO. The base case is a CLO rated AAA by both agencies in 2013. OLS coefficient estimates are presented with *t*-statistics in parentheses.

	All CDOs		
	Either	S&P's	Moody's
One rater	3.69	9.37	-3.65
	(0.58)	(1.48)	(-0.48)
Fitch rated	-14.36	-10.64	-11.85
	(-1.88)	(-1.34)	(-1.21)
CDO	13.56	-99.86	115.15
	(0.55)	(-3.86)	(3.51)
Intercept	132.96	130.53	131.37
	(35.65)	(45.94)	(35.96)
Year controls	Yes	Yes	Yes
Observations	456	362	383
R-squared	0.1	0.09	0.16

Table 3. CDO downgrades vs. single/multiple credit ratings. The dependent variable being the number of notches of rating downgrade for the CDO's lowest AAA tranche from inception to February 2016. The independent variables include One rater, which equals one if the CDO's AAA tranches are rated by either the S&P's or Moody's, but not both; Fitch rated, which equals one if Fitch also rates the CDO; CDO, which equals one if the deal is a synthetic CDO; and Credit spread, the weighted average yield spread of the CDO. The base case is a CLO rated AAA by both agencies in 2013. Odds ratios from ordered logit regressions are presented with *z*-statistics in parentheses.

	All CDOs	
	S&P's downgrades	Moody's downgrades
One rater	1.75	3.84
	(0.90)	(2.76)
Credit spread	0.87	0.84
	(-3.00)	(-4.49)
Fitch rated	0.41	0.61
	(-0.98)	(-1.00)
CDO	0.61	2.36
	(-0.31)	(0.00)
Year controls	Yes	Yes
Observations	359	381
R-squared	0.36	0.39

Figure 1. The S&P's downgrades. This figure plots the average number of notches of rating downgrade for the lowest AAA tranche of each CDO rated by the S&P's for the One rater and Two-agree categories by the CDO's year of issuance.

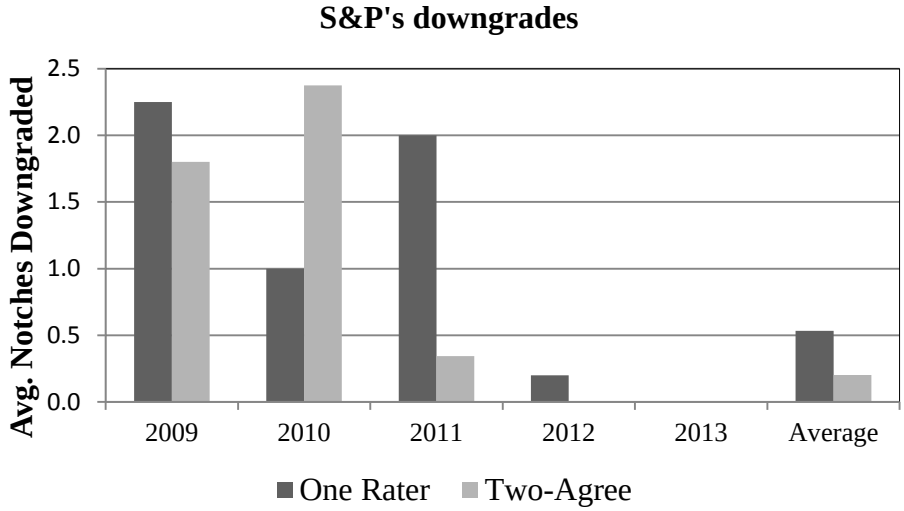

Figure 2. Moody's downgrades. This figure plots the average number of notches of rating downgrade for the lowest AAA tranche of each CDO rated by Moody's for the One rater and Two-agree categories by the CDO's year of issuance.