



Special Report: Rating Agency Performance

Why It's a Problem That Only Rating Agencies Evaluate Their Performance

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Introduction

When regulators, legislators and academics propose to increase ratings competition, they're not proposing that credit rating agencies (CRAs) compete to achieve the *highest* rating that earns them business.

Right or wrong, the hope is that the introduction of new players to the field will encourage CRAs to compete on performance, a process that would culminate in the provision of ratings of a higher quality. Oddly though, our market retains, or allows for, only the most immature methods of performance measurement. How can we ensure rating agencies are competing based on performance if we have yet to establish adequate and consistent performance metrics? In fact, it is the CRAs alone who define these metrics, differently, and who measure their performance. This internally-created performance measurement, we understand, continues to go unaudited and unverified.

Our paper does not take a position on whether increasing the number of CRAs would (i) indeed increase ratings inflation, or whether it would (ii) improve either the accuracy or reliability of credit ratings. Nor is it our goal to contemplate a market feedback mechanism, or regulatory resolution authority, that would endorse strong ratings performance or punish the alternative.

Our purpose is solely to demonstrate why the measurement of a CRA's performance ought to be performed by an external, preferably independent, party.

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How Performance is Currently Being Constructed ... and Problems Therewith

Measuring ratings performance brings with it a number of challenges: among other things, CRAs' methodological changes are numerous and regular. Sometimes, CRAs also adjust or change the scale against which their ratings are mapped. How does one compare a CRA's performance when a single **A** rating originally defined according to one system is transformed into a double **A** in the new system?

But beyond these difficulties, having the performance documented by the CRAs themselves presents certain additional informational asymmetries, as detailed below. Furthermore, a natural conflict of interest arises: the CRAs (at least conceptually) compete based on the accuracy of their ratings, which accuracy they themselves define and calculate.¹

Ratings Transition Tables

Rating Agencies tend to provide calendar year performance data in a difficult-to-use, impossible-to-verify format. By way of a ratings transition table (or "migration matrix") a CRA displays the cumulative performance² of a cohort of ratings outstanding as of January 1 and compares those ratings to the ratings outstanding on the same securities as of December 31 of the same year.

The rows of the matrix show all possible ratings a security could have at the beginning of the period being investigated, by rating category. The columns of the matrix show the resulting distribution of all ratings at the beginning of the tested period among all possible ratings at the end of the period, also by rating category.

Thus, the associated transition table ought to be understood as follows:

- Of those companies/securities initially rated **AAA**: 90% remained **AAA** at the end of the tested period; 5% were downgraded to **AA+**; and 5% were downgraded to **AA**
- Of the companies/securities initially rated **AA+**: 2% were upgraded to **AAA**; 85% remained **AA+**; and 13% were downgraded to **AA**

	Final Rating		
Initial Rating	AAA	AA+	AA
AAA	90%	5%	5%
AA+	2%	85%	13%

The "calendar" year approach differs from a rolling annual approach, and can be exploited as follows:

Consider a newly-issued bond rated **AAA** on December 27, 2008. Suppose the CRA that rated the bond immediately realized that it was a poor bond, that it was highly likely to suffer loss, and that it ought to be rated **C** as its eventual default was inevitable. The CRA might choose to massage its performance according to Scenario 1 – or not to, which results in Scenario 2.

- Scenario 1: CRA downgrades the bond from **AAA** to **CC** on December 31, 2008, and then from **CC** to **C** on January 1, 2009.
- Scenario 2: CRA downgrades the bond from **AAA** to **C** on January 1, 2009.

While both scenarios have the same result — the rating ultimately went from **AAA** on December 27, 2008 to **C** on January 1, 2009 — the CRA's performance for the year 2009 differs remarkably according to the approach

¹ Compare this to the conflict of interest arising if hedge funds were to *internally* value their own portfolios' net asset values (NAVs). An investor in the fund might rightly query whether the fund is performing these valuations in an unbiased manner, knowing that hedge funds often derive performance-based fees, and compete otherwise, based on prior returns performance (for example to raise new capital). Increased asset valuations translate directly into improved performance returns.

² A user cannot "drill-down" from the cumulative data to the underlying supporting data to verify its accuracy.

taken. Importantly, the bond will not be presented in the CRA's year 2008 performance since it was first rated during the calendar year, and would thus have avoided inclusion in the January 2008 cohort.

Scenario 1

Credit Rating Migration Matrix
Rating as of December 31 2009

Rating as of 1/1/2009	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	D	NR	Ave. Ratings Change	Count	
	AAA	100%																								
AA+		100%																								
AA			100%																							
AA-				100%																						
A+					100%																					
A						100%																				
A-							100%																			
BBB+								100%																		
BBB									100%																	
BBB-										100%																
BB+											100%															
BB												100%														
BB-													100%													
B+														100%												
B															100%											
B-																100%										
CCC+																	100%									
CCC																		100%								
CCC-																			100%							
CC																				100%						
C																					100%					1
D																										
Weighted Average / Total:																							1.00	1		

Scenario 2

Credit Rating Migration Matrix
Rating as of December 31 2009

Rating as of 1/1/2009	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	D	NR	Ave. Ratings Change	Count	
	AAA	100%																				100%				20.00
AA+		100%																								
AA			100%																							
AA-				100%																						
A+					100%																					
A						100%																				
A-							100%																			
BBB+								100%																		
BBB									100%																	
BBB-										100%																
BB+											100%															
BB												100%														
BB-													100%													
B+														100%												
B															100%											
B-																100%										
CCC+																	100%									
CCC																		100%								
CCC-																			100%							
CC																				100%						
C																					100%					
D																										
Weighted Average / Total:																							20.00	1		

Scenario 1 would certainly appeal to a CRA wanting to advertise its performance, as users would not be surprised at a **CC** security being downgraded to **C**. Investors and regulators focus keenly, however, on the performance of **AAA**-rated securities: the downgrading of a **AAA** security (Scenario 2) to **C** might cause a stir.

If a CRA were to manipulate its performance per the approach shown in Scenario 1, the performance of this **AAA** security would never feature in the ratings archives. An investor studying CRA-produced performance data of

AAA securities³ would thus be starved of complete information, leaving her vulnerable to over-estimating future performance due to the employment of a downgrading practice by the CRA in question.⁴

A second challenge is to estimate monthly or quarterly or semi-annual rating migrations. Such a calculation may be important for funds, structures or vehicles whose periodic payments are linked to the (ratings) performance of underlying securities. For example, many collateralized debt obligations (CDOs) have quarterly or semi-annual payment structures, whose priorities might be subject to ratings downgrades which may trigger ratings-based haircuts. Unlike the construction of a two-year migration from a one-year matrix — which is a simple process of squaring the matrix — applying an annual matrix to estimate inter-annual frequencies requires the implementation of complex mathematical techniques.⁵ Given that the actual data exist, it seems unnecessary to place the burden of implementing expensive approximation algorithms on the user.

One solution to both challenges presented is to empower an external party to produce rolling-window periodic migration tables. Under a rolling analysis, the downgrade from **AAA** to **C** under Scenario 1 would be captured in the daily or weekly cohorts created as of December 31, 2008 or December 29, 2008, respectively.⁶ Similarly, under this approach, one could directly analyze quarterly or semi-annual transition matrices (as opposed to having to produce inexact estimates based on annual data).

Why the Performance Data is (Largely) Unverifiable

To be able to verify the accuracy of a transition matrix, you would require access to *all rating actions* made by the CRA. The CRAs often contend that their rating actions are part of their property. As such, even if an advantage of the “issuer-pays” ratings model is to make ratings more accessible to everybody, it doesn’t translate into the ratings feed being made available to everybody. Rather, the CRAs sell this feed. Importantly, to the extent the feed might produce unflattering output, or output inconsistent with the advertised performance, it remains uncertain whether all CRAs would be willing to sell access to this feed to a party interested in constructing the performance tables.

But even having access to this feed doesn’t necessarily ensure one can verify the accuracy of their performance. One remains limited to verifying the tabulation of the data that the CRA is providing. Certain rating actions might, for example, have conveniently escaped a CRA’s database. Among thousands or tens of thousands of rating actions it is hard enough to spot an error in the data provided, never mind notice that data are absent from the feed. Further, CRAs often make legitimate over-writes to the extent a rating is adjusted after the realization of an administrative error. Administrative errors are not infrequent — for some rating agencies they occur on average daily — and so “tying” out to the final ratings performance demonstrated may constitute an impossible task.

The Treatment of Defaulted Securities

³ For example, an investor may wish to contemplate default probabilities or downgrade rates (frequency or magnitude, or both), such as the likelihood of a **AAA** being downgraded to **C** within one year.

⁴ While the examples shown are hypothetical, the slow downgrading practice itself is very real: evidence of the practice at the CRAs has, for example, been made publicly available in the exhibits to the Congressional Hearing on *Wall Street and the Financial Crisis: The Role of Credit Rating Agencies*, (April 23, 2010). http://hsgac.senate.gov/public/files/Financial_Crisis/042310Exhibits.pdf.

⁵ See for example time-homogeneous Markov chains, Generator Matrices, Regularization Algorithms and Quasi-Optimization and Distance Minimization Problems for the Root Matrix.

⁶ Monday December 29, 2008 would have been the first day of a weekly cohort.

The first takeaway is that a security is only recognized as “defaulted” if and when a CRA decides to downgrade it to **D**.

Suppose the following situation occurs:

- a security is rated **AAA** as of January 1, 2008 (and is therefore included in the 2008 cohort);
- it is subsequently downgraded to **BB** in July 2008 and defaults in December 2008; and
- the CRA downgrades the bond to **D** in January 2009.

Since the CRA downgraded this bond to **D** during the year 2009, it will never be included in the **AAA-to-D** transition cell. Rather, it will show as a **AAA-to-BB** transition in 2008. More interestingly, it may not even show as a **BB-to-D** transition in 2009: since the security has defaulted (and may even have been wiped out completely) its rating might be withdrawn by the CRA. In such a scenario, it would show up as a **BB-to-WR** transition, and no information would be provided as to whether the security paid off in full or suffered a loss prior to having its rating withdrawn.

Credit Rating Migration Matrix
Rating as of December 31 2009

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	D	WR	Ave. Ratings Change	Count	
AAA	58.8%	0.5%	0.9%	0.3%	0.2%	2.2%	0.2%		2.6%	0.2%		2.8%			0.2%						1.2%	9.8%	20.2%	3.77	582	
AA+		55.3%	1.0%	26.2%		1.0%			1.0%	1.9%	1.0%	1.9%		1.9%	1.0%						1.0%	6.8%		2.98	103	
AA			0.4%	87.9%		2.6%	0.4%		0.4%	1.8%	0.7%	0.7%		2.2%							0.4%	2.2%		1.18	273	
AA-					77.8%	7.0%	0.6%		0.3%		0.3%	0.6%	0.6%	0.3%							0.9%	2.3%	9.4%	0.92	342	
A+						87.8%	0.2%				0.2%	0.1%	0.2%	0.3%							0.5%	2.6%	8.0%	0.66	938	
A							0.9%	70.6%	1.4%		0.9%	16.5%	0.9%	0.5%	0.9%	0.5%					1.4%	5.1%		1.97	218	
A-								6.1%	75.0%	0.5%	9.0%				1.4%						2.4%	5.7%		1.48	212	
BBB+									3.6%	66.3%	7.2%			1.2%							2.4%	18.1%	1.2%	3.00	83	
BBB										0.8%	75.8%	1.7%	0.8%		3.3%	2.5%					0.8%	14.2%		2.35	120	
BBB-											18.2%	69.1%									0.6%	10.9%		1.44	165	
BB+												4.8%	31.4%	1.9%							1.0%	7.6%		4.69	105	
BB													2.1%	52.1%							53.3%	2.1%	35.4%		3.96	48
BB-														64.7%							2.1%	32.4%		3.03	34	
B+															2.8%	77.5%	1.4%	2.8%		1.4%	1.4%	12.7%		1.23	71	
B																44.3%	39.8%			0.9%	15.0%			1.50	113	
B-																	77.3%				4.6%	18.2%		1.32	22	
CCC+																		100.0%						1.00	4	
CCC																										
CCC-																										
CC																										
C																						83.3%	16.7%	1.00	6	
D																										
	Weighted Average / Total:																						1.85	3439		

Thus, if you had reason to believe in the accuracy of a CRA's transition table, such as the one above, one would still not be certain as to the default rate suffered during the year 2009 on **AAA** securities. While certain market participants may not appreciate this fact, the default rate could be anywhere from 9.8% to 30%, as the 20.2% reflected in the **AAA-to-WR** column may or may not have defaulted before being withdrawn.

Thus, a CRA's delayed recognition of default — usually a sign that a rating agency is not carefully monitoring a situation — undesirably has the opposite effect, by actually serving to improve ratings performance.

The second takeaway from this section is that not all defaults are equal. CRAs define defaults differently, and this feature might affect the relative performance of different CRAs. While one rating agency might consider the government's rescue of **AIG** or **Fannie Mae** or **Freddie Mac** to constitute a default, others may conveniently classify their rescue as a non-default. Given the high ratings of these institutions, even immediately before default, their default may considerably skew a CRA's performance.⁷

Both of these classification biases can be reduced or eliminated via the external maintenance of a single database that includes all defaulted securities. By applying the same standards (and default timing) to all securities across ratings agencies, the competitive landscape will be leveled, with all CRAs being subjected to the

⁷ See also Donald van Deventer's piece which complains, not unreasonably, of the capacity for CRAs to exaggerate the accuracy of their historical performance in rating corporate bonds: <http://www.kamakuraco.com/Blog/tabid/231/EntryId/94/It-s-Time-for-an-Independent-Audit-of-Rating-Agency-Corporate-Bond-Rating-Performance-Update-2.aspx>

same standards. Such a procedure would thereby enhance the application of a meaningful cross-CRA performance comparison.

Conclusion

The current regime of allowing CRAs to demonstrate their own ratings performance brings with it an inherent conflict of interest: since the CRAs (at least conceptually) compete based on performance their interests are aligned with presenting as favorable an impression as possible. This paper magnifies certain of the numerous instances in which CRAs are able, should they be willing, to artificially improve their own performance.

A user who blindly relies on the data presented — for example to estimate downgrade possibilities or default probabilities — leaves herself open to significantly underestimating both the magnitude and velocity of future downgrades and defaults. Additionally, the mere possibility that a CRA may manipulate its performance data renders the performance data less reliable. Given the limited ability afforded to a user who may wish to verify the data being presented, the user suffers the typical “lemons problem,”⁸ in this case being unable to separate the accurately-described performance data from that which has been manipulated. As such, a more sophisticated investor, attuned to the potential for selection or representational biases, might apply an additional stress to all forecasts that may be arrived at via her analysis of potentially biased data.

According to the general economic principle, consumer (or user) confidence would be enhanced if the potentially biased data being relied upon were to be externally verified.

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Please contact PF2 Securities Evaluations if you have questions you would like to discuss about this research piece, or about rating agency reform measures in general.

⁸ See Akerlof, George A. (1970). "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism". *Quarterly Journal of Economics* (The MIT Press) 84 (3): 488–500

Addendum — Resources

Credit Rating Agency Research (available at <http://www.pf2se.com/Content.aspx?Type=Research>)

February 1, 2010: [Economies of \(Ratings\) Scales Part 1](#)

January 22, 2010: [A Centralized Solution](#)

January 8, 2010: [“Gaming” the Ratings System, or the Observer Effect](#)

September 14, 2009: [Special Report: First Steps Toward Real Rating Agency Reform](#)

Relevant Regulatory Submissions

January 3, 2011: [Submission to European Commission in re: “Public Consultation on Credit Rating Agencies”](#)

November 12, 2010: [Submission to the SEC in re: “Dodd-Frank Wall Street Reform and Consumer Protection Act Title IX Subtitle C — Improvements to the Regulation of Credit Rating Agencies”](#)

August 31, 2010: [Response to FDIC, FRB, OCC, OTS’s “Advanced Notice of Proposed Rules \(ANPR\) on Alternatives to Use of External Credit Ratings”](#)

Related Credit Rating Postings

RatingsReform: www.ratingsreform.wordpress.com

Expect[ed] Loss: <http://expectedloss.blogspot.com/search/label/Rating%20Agency%20Reform>

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